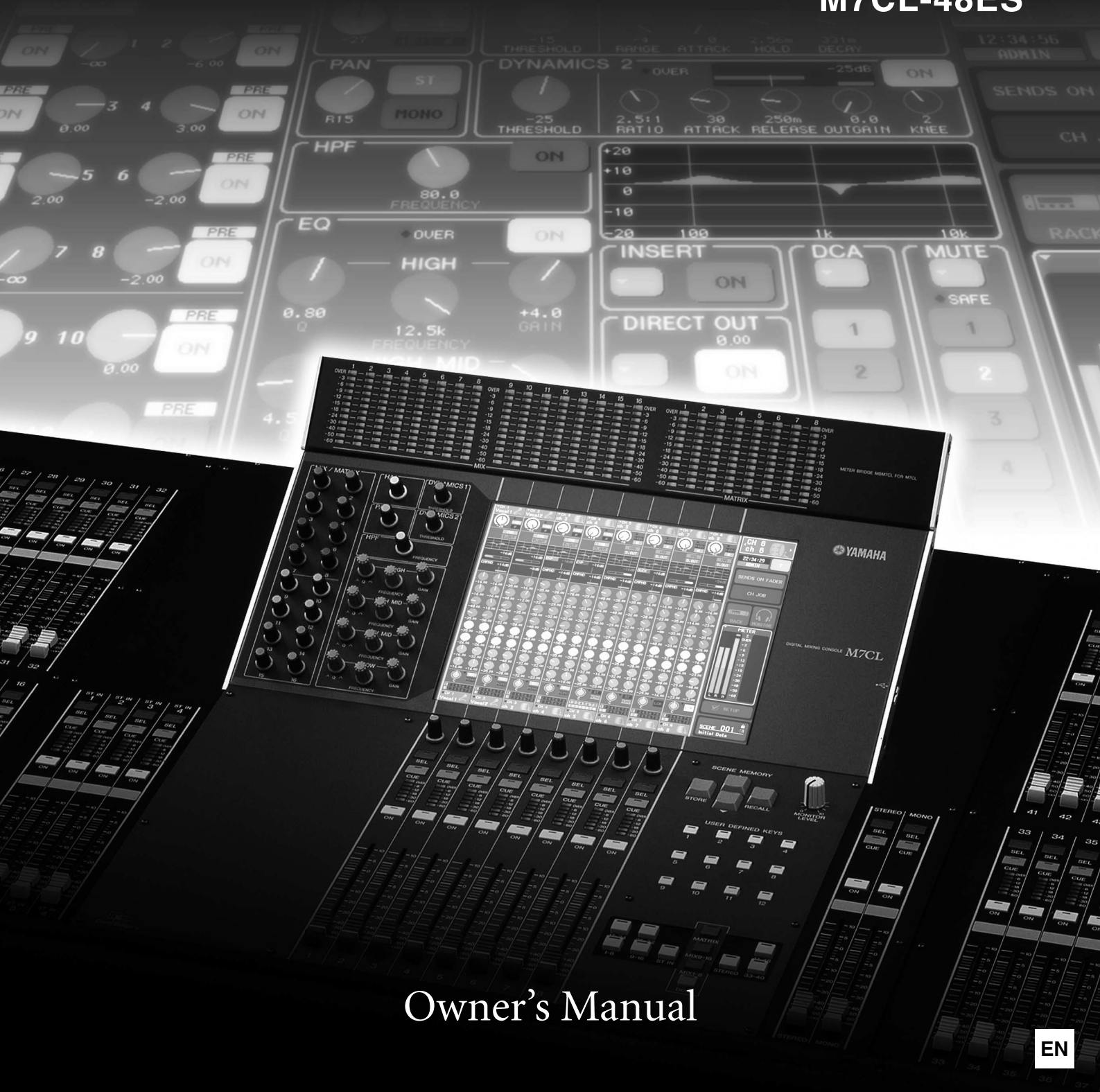
YAMAHA

DIGITAL MIXING CONSOLE

# M7CL

VERSION3

**M7CL-32**
**M7CL-48**
**M7CL-48ES**




Owner's Manual

EN

# FCC INFORMATION (U.S.A.)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

   Relocate either this product or the device that is being affected by the interference.

   Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

   In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

   If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

   The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (class B)

## COMPLIANCE INFORMATION STATEMENT (DECLARATION OF CONFORMITY PROCEDURE)

| | |
|---|---|
| Responsible Party : | Yamaha Corporation of America |
| Address : | 6600 Orangethorpe Ave., Buena Park, Calif. 90620 |
| Telephone : | 714-522-9011 |
| Type of Equipment : | DIGITAL MIXING CONSOLE |
| Model Name : | M7CL-48, M7CL-32, M7CL-48ES |

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1) this device may not cause harmful interference, and

2) this device must accept any interference received including interference that may cause undesired operation.

See user manual instructions if interference to radio reception is suspected.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (FCC DoC)

## IMPORTANT NOTICE FOR THE UNITED KINGDOM

### Connecting the Plug and Cord

**WARNING:** THIS APPARATUS MUST BE EARTHED

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

| | |
|---|---|
| GREEN-AND-YELLOW | : EARTH |
| BLUE | : NEUTRAL |
| BROWN | : LIVE |

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or colored GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

• This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd. (3 wires)

This product contains a battery that contains perchlorate material.

Perchlorate Material—special handling may apply,

See www.dtsc.ca.gov/hazardouswaste/perchlorate.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (Perchlorate)

This product contains a high intensity lamp that contains a small amount of mercury. Disposal of this material may be regulated due to environmental considerations.
For disposal information in the United States, refer to the Electronic Industries Alliance web site:
www.eiae.org

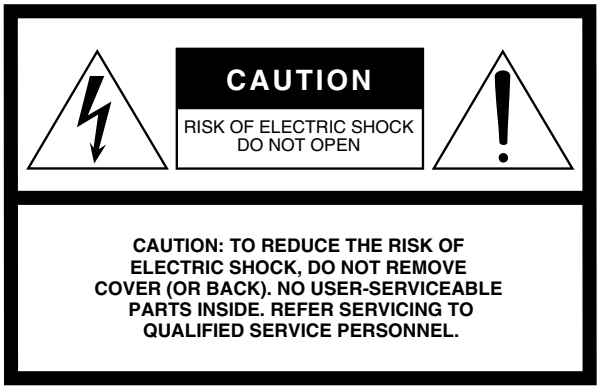
* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA. (mercury)

In Finland: Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.

In Norway: Apparatet må tilkoples jordet stikkontakt.

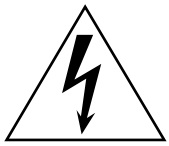
In Sweden: Apparaten skall anslutas till jordat uttag.

(class1_hokuo)


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The top half of the above warning is located on the top or the rear panel of the unit.

## Explanation of Graphical Symbols



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

# IMPORTANT SAFETY INSTRUCTIONS

1 **Read these instructions.**
2 **Keep these instructions.**
3 **Heed all warnings.**
4 **Follow all instructions.**
5 **Do not use this apparatus near water.**
6 **Clean only with dry cloth.**
7 **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.**
8 **Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.**
9 **Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**
10 **Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**
11 **Only use attachments/accessories specified by the manufacturer.**
12 **Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.**

13 **Unplug this apparatus during lightning storms or when unused for long periods of time.**
14 **Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**

**WARNING**
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

(98-6500)

**ADVARSEL!**
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

**VARNING**
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

**VAROITUS**
Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

(lithium caution)

**NEDERLAND / THE NETHERLANDS**

- Dit apparaat bevat een lithium batterij voor geheugen back-up.
- This apparatus contains a lithium battery for memory back-up.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat ann het einde van de levensduur of gelieve dan contact op te nemen met de vertegenwoordiging van Yamaha in uw land.
- For the removal of the battery at the moment of the disposal at the end of life please consult your retailer or Yamaha representative office in your country.
- Gooi de batterij niet weg, maar lever hem in als KCA.
- Do not throw away the battery. Instead, hand it in as small chemical waste.

(lithium disposal)

# PRECAUTIONS

## *PLEASE READ CAREFULLY BEFORE PROCEEDING*

* Please keep this manual in a safe place for future reference.

## ⚠ *WARNING*

**Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:**

### Power supply/Power cord

- Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.
- Use only the included power cord. Use only the specified power supply (PW800W), if you use an external power supply. If you intend to use the device in an area other than in the one you purchased, the included power cord may not be compatible. Please check with your Yamaha dealer.
- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
- Be sure to connect to an appropriate outlet with a protective grounding connection. Improper grounding can result in electrical shock.

### Do not open

- Do not open the device or attempt to disassemble the internal parts or modify them in any way. The device contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.

### Water warning

- Do not expose the device to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings. If any liquid such as water seeps into the device, turn off the power immediately and unplug the power cord from the AC outlet. Then have the device inspected by qualified Yamaha service personnel.
- Never insert or remove an electric plug with wet hands.

### If you notice any abnormality

- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the device, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.
- If this device power supply should be dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.

## ⚠ *CAUTION*

**Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:**

### Power supply/Power cord

- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms.
- When removing the electric plug from the device or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it.

### Location

- When transporting or moving the device, always use two or more people. Attempting to lift the device by yourself may damage your back, result in other injury, or cause damage to the device itself.
- When transporting or moving the device, do not hold the display.
- Before moving the device, remove all connected cables.
- When setting up the device, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, electricity is still flowing to the product at the minimum level. When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.
- Avoid setting all equalizer controls and faders to their maximum. Depending on the condition of the connected devices, doing so may cause feedback and may damage the speakers.
- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the internal components.
- Do not place the device in an unstable position where it might accidentally fall over.
- Do not block the vents. This device has ventilation holes at the rear to prevent the internal temperature from becoming too high. In particular, do not place the device on its side or upside down. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire.
- Do not use the device in the vicinity of a TV, radio, stereo equipment, mobile phone, or other electric devices. Doing so may result in noise, both in the device itself and in the TV or radio next to it.
- Do not place the device in a location where it may come into contact with corrosive gases or salt air. Doing so may result in malfunction.

### Connections

- Before connecting the device to other devices, turn off the power for all devices. Before turning the power on or off for all devices, set all volume levels to minimum.

## Handling caution

- When turning on the AC power in your audio system, always turn on the power amplifier LAST, to avoid speaker damage. When turning the power off, the power amplifier should be turned off FIRST for the same reason.
- Condensation can occur in the device due to rapid, drastic changes in ambient temperature—when the device is moved from one location to another, or air conditioning is turned on or off, for example. Using the device while condensation is present can cause damage. If there is reason to believe that condensation might have occurred, leave the device for several hours without turning on the power until the condensation has completely dried out.
- Do not insert your fingers or hands in any gaps or openings on the device (vents).
- Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings on the device (vents) If this happens, turn off the power immediately and unplug the power cord from the AC outlet. Then have the device inspected by qualified Yamaha service personnel.
- Do not use the device or headphones for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.
- Do not rest your weight on the device or place heavy objects on it, and avoid use excessive force on the buttons, switches or connectors.
- Do not apply oil, grease, or contact cleaner to the faders. Doing so may cause problems with electrical contact or fader motion.

## Backup battery

- This device has a built-in backup battery that maintains data in internal memory even when the device's power is switched off. The backup battery will eventually become depleted, however, and when that happens the contents of the internal memory will be lost.* To prevent loss of data be sure to replace the backup battery before it becomes fully depleted. When the backup battery is running low, the LCD display indicates "Low Battery!" when you starting up the system, (In this case, the Battery field indicates "LOW" or "NO" in the SETUP screen.) immediately save the data to a USB storage device, then have qualified Yamaha service personnel replace the backup battery. The average life of the internal backup battery is approximately 5 years, depending on operating conditions.

* Data items maintained in the internal memory by the backup battery are as follows:

- Current scene parameters and number.
- Library data.

XLR-type connectors are wired as follows (IEC60268 standard): pin 1: ground, pin 2: hot (+), and pin 3: cold (-).

Yamaha cannot be held responsible for damage caused by improper use or modifications to the device, or data that is lost or destroyed.

Always turn the power off when the device is not in use.

The performance of components with moving contacts, such as switches, volume controls, and connectors, deteriorates over time. Consult qualified Yamaha service personnel about replacing defective components.

**Accessories**

- Power cord
- Cord clamp
- Dust cover
- Owner's Manual (this book)

**European models**

Purchaser/User Information specified in EN55103-1 and EN55103-2.
Inrush Current: 21 A
Conforms to Environments: E1, E2, E3 and E4

### Information for Users on Collection and Disposal of Old Equipment

This symbol on the products, packaging, and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC.

By disposing of these products correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

**[For business users in the European Union]**
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

**[Information on Disposal in other Countries outside the European Union]**
This symbol is only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

(weee_eu)

# Contents


## 1. Introduction 9

**Thank you ..... 9**
**An overview of the M7CL ..... 9**
**About the models ..... 11**
**The M7CL's channel structure ..... 14**
**About the MIX bus types (VARI / FIXED) ..... 15**
**About word clock ..... 15**
**Conventions in this manual ..... 15**
**About the firmware version ..... 16**

## 2. Panels and controls 17

**Top panel ..... 17**
**Rear panel ..... 24**
**Under the front pad ..... 27**

## 3. Basic operation of the M7CL 29

**Basic operations in the top panel / touch screen .. 29**
Pressing the touch screen ..... 29
Multiple selection (specifying a range) ..... 29
Special operations for keys ..... 29
Encoder operations ..... 29
Multifunction encoder operations ..... 30
**The on-screen user interface ..... 30**
Tabs ..... 30
Buttons ..... 30
Faders / Knobs ..... 31
List windows ..... 31
Keyboard window ..... 31
Popup windows ..... 32
Dialog boxes ..... 32
**Viewing the touch screen ..... 32**
Function access area ..... 32
Main area ..... 33
**Entering names ..... 34**
**Using the tool buttons ..... 35**
About the tool buttons ..... 35
Using libraries ..... 35
Initializing settings ..... 39
Copying/pasting settings ..... 40
Comparing two settings ..... 40

## 4. Connections and setup 43

**Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function ..... 43**
**Audio input/output connections ..... 46**
**Setup items required when you start up the M7CL for the first time ..... 50**
Restoring the current scene to the default state .. 50
Word clock connections and settings ..... 50
Making HA (Head Amp) gain settings ..... 51
Sending an input channel signal to the STEREO bus ..... 54

## 5. Input channel operations 57

**Signal flow for input channels ..... 57**
**Specifying the channel name and icon ..... 59**
**Making HA (Head Amp) settings ..... 61**
**Sending the signal from an input channel to the STEREO/MONO buses ..... 63**
**Sending the signal from an input channel to a MIX bus ..... 67**
Using the SELECTED CHANNEL section ..... 67
Using the Centralogic section ..... 69
Using the faders (SENDS ON FADER mode) ..... 70
**Sending the signal from an input channel to the MATRIX buses ..... 72**
Using the SELECTED CHANNEL section ..... 72
Using the Centralogic section ..... 74
Using the faders (SENDS ON FADER mode) ..... 75
**Channel library operations ..... 77**

## 6. Output channel operations 79

**Signal flow for output channels ..... 79**
**Specifying the channel name and icon ..... 81**
**Sending signals from MIX channels to the STEREO/MONO bus ..... 82**
**Sending signals from MIX channels and STEREO/MONO channels to MATRIX buses ..... 85**
Using the SELECTED CHANNEL section ..... 85
Using the Centralogic section ..... 86
**Channel library operations ..... 88**

## 7. Operations in the SELECTED CHANNEL section 89

**About the SELECTED CHANNEL section ..... 89**
**About the SELECTED CHANNEL VIEW screen ..... 90**
**Operations in the SELECTED CHANNEL section .. 91**

## 8. Operations in the Centralogic section 97

**About the Centralogic section ..... 97**
**About the OVERVIEW screen ..... 98**
**Operations in the Centralogic section ..... 100**
**Fixing the channels or DCA groups of the Centralogic section ..... 104**

## 9. Input/output patching 105

**Changing the output patch settings ..... 105**
**Changing the input patch settings ..... 108**
**Inserting an external device into a channel ..... 110**
**Directly outputting an INPUT channel ..... 112**

## 10. EQ and Dynamics 115

**About EQ and dynamics ..... 115**
**Using EQ ..... 115**
**Using dynamics ..... 118**
**Using the EQ or Dynamics libraries ..... 121**
EQ library ..... 121
Dynamics library ..... 121

## 11. Grouping and linking 123

**About DCA Groups and Mute Groups ..... 123**
**Using DCA groups ..... 123**
Assigning channels to a DCA group ..... 123
Controlling DCA groups ..... 125
**Using mute groups ..... 126**
Assigning channels to mute groups ..... 126
Controlling mute groups ..... 127
Using the Mute Safe function ..... 129
**The Channel Link function ..... 130**
Linking the desired input channels ..... 130
**Copying, moving, or initializing a channel ..... 132**
Copying the parameters of a channel ..... 132
Moving the parameters of a channel ..... 133
Initializing the parameters of a channel ..... 134

## 12. Scene memory 135

**About scene memories ..... 135**
**Using scene memories ..... 135**
Storing a scene ..... 135
Recalling a scene ..... 138
Using user-defined keys to recall ..... 139
**Editing scene memories ..... 140**
Sorting and renaming scene memories ..... 140
Scene memory editing ..... 142
Copying/pasting a scene ..... 142
Clearing a scene ..... 143
Cutting a scene ..... 144
Inserting a scene ..... 144
**Using the Global Paste ..... 145**
Using the Global Paste function ..... 145
**Using the Focus function ..... 147**
**Using the Recall Safe function ..... 148**
**Using the Fade function ..... 151**

## 13. Monitor/Cue 153

**About the monitor/cue functions ..... 153**
**Using the Monitor function ..... 154**
**Using the Cue function ..... 157**
About cue groups ..... 157
**Operating the Cue function ..... 158**

## 14. Talkback / Oscillator 161

**About the talkback and oscillator functions ..... 161**
**Using talkback ..... 162**
**Using the oscillator ..... 164**

## 15. Meters 167

**Operations in the METER screen ..... 167**
**Using the MBM7CL meter bridge (option) ..... 169**

## 16. Graphic EQ and effects 171

**About the virtual rack ..... 171**
Virtual rack operations ..... 172
**Graphic EQ operations ..... 175**
About the graphic EQ ..... 175
Inserting a GEQ in a channel ..... 175
Using the 31BandGEQ ..... 177
Using the Flex15GEQ ..... 178
**About the internal effects ..... 180**
Using an internal effect via send/return ..... 181
Inserting an internal effect into a channel ..... 183
Editing the internal effect parameters ..... 184
Using the Tap Tempo function ..... 186
Using the Freeze effect ..... 188
**Using the graphic EQ and effect libraries ..... 189**
**Using an external head amp ..... 190**
Connecting the M7CL-32/48 to the AD8HR ..... 190
Connecting the M7CL-48ES to the AD8HR ..... 191
Connecting the M7CL-32/48 to the SB168-ES ..... 192
Remotely controlling an external head amp ..... 193

## 17. MIDI 197

**MIDI functionality on the M7CL ..... 197**
**Basic MIDI settings ..... 198**
**Using program changes to recall scenes and library items ..... 200**
**Using control changes to control parameters ..... 203**
**Using parameter changes to control parameters 205**

## 18. User settings (Security) 207

**User Level settings ..... 207**
User types and user authentication keys ..... 207
Setting the Administrator password ..... 208
Creating a user authentication key ..... 209
Logging-in ..... 209
Changing the password ..... 211
Editing a user authentication key ..... 212
Changing the user level ..... 212
**Preferences ..... 214**
**User-defined keys ..... 216**
**Console lock ..... 217**
Locking the console ..... 217
Unlocking the console ..... 217
**Using a USB storage device to save/load data ..... 218**
Saving the M7CL's internal data on a USB storage device ..... 218
Loading a file from a USB storage device ..... 219
Converting and loading the file content from a USB storage device ..... 220
Editing the files saved on a USB storage device ..... 221
Formatting media on a USB storage device ..... 224

## 19. Help function 225

**Loading a Help file from a USB storage device ... 225**
**Loading a text file from a USB storage device .... 226**
**Viewing Help ..... 227**
**Using user-defined keys to recall Help directly ... 227**

## 20. Other functions 229

**About the SETUP screen ..... 229**
**Word Clock and Slot settings ..... 230**
**Using cascade connections ..... 232**
Operations on the cascade slave M7CL ..... 232
Operations on the cascade master M7CL ..... 233
**Basic settings for MIX buses and MATRIX buses ..... 234**
**Setting the date and time of the internal clock .... 235**
**Setting the network address ..... 236**
**Specifying the brightness of the touch screen, LEDs, and lamps ..... 237**
**Initializing the M7CL's internal memory ..... 238**
**Adjusting the detection point of the touch screen (Calibration function) ..... 239**
**Adjusting the faders (Calibration function) ..... 240**
**Adjusting the input/output gain (Calibration function) ..... 241**
**Connecting SB168-ES units to the M7CL-48ES using the Stage Box Setup function ..... 242**
Changing settings to suit the connection ..... 242
**Changing the EtherSound settings from AVS-ESMonitor (M7CL-48ES) ..... 243**

## Appendices 245

**EQ Library List ..... 245**
**DYNAMICS Library List ..... 246**
**Dynamics Parameters ..... 249**
**Effect Type List ..... 252**
**Effects Parameters ..... 253**
**Effects and tempo synchronization ..... 265**
**Scene Memory/Effect Library to Program Change Table ..... 266**
**Parameters that can be assigned to control changes ..... 270**
**Control change parameter assignments ..... 272**
**NRPN parameter assignments ..... 274**
**Mixing parameter operation applicability ..... 277**
**Functions that can be assigned to user-defined keys ..... 280**
**MIDI Data Format ..... 282**
**Warning/Error Messages ..... 289**
**Troubleshooting ..... 291**
**General Specifications ..... 293**
**Input/output characteristics ..... 293**
**Electrical characteristics ..... 295**
**Mixer Basic Parameters ..... 297**
**Pin Assignment ..... 298**
**Dimensions ..... 299**
**Installing the MBM7CL meter bridge (option) ..... 300**
**MIDI Implementation Chart ..... 301**
**Index ..... 302**
**Block Diagram ..... End of Manual**
**Level Diagram ..... End of Manual**


- The illustrations and screen displays as shown in this Owner's manual are for instructional purposes only, and may be different from the ones on your device.
- Centralogic is trademark of Yamaha Corporation.
- Ethernet is a trademark of Xerox Corporation.
- EtherSound is a registered trademark of Digigram S.A.
- The company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies.

# ◆ Chapter 1 ◆
# Introduction



## Thank you

Thank you for purchasing the Yamaha M7CL digital mixing console. In order to take full advantage of the M7CL's superior functionality and enjoy years of trouble-free use, please read this manual before you begin using the product. After you have read the manual, keep it in a safe place.

## An overview of the M7CL

The M7CL is a digital mixing console with the following features.

### ■ A mixing system that delivers both cutting-edge digital technology and analog-style operation

The M7CL is a full-digital mixing console containing the latest digital technology, designed for installed systems or SR applications. 24-bit linear AD/DA converters are used to deliver up to 108 dB of dynamic range and amazing sound quality.
The M7CL features 32 (M7CL-32 model) or 48 (M7CL-48 model) monaural INPUT channels, and four stereo ST IN channels. The M7CL-48ES model features EtherSound input channels and eight monaural INPUT channels (OMNI IN).
As output channels, it provides 16 MIX channels, eight MATRIX channels, a STEREO channel, and a MONO channel. L/C/R three-channel output using the STEREO/MONO channels is also supported.
The user interface has been completely redesigned for simple and intuitive operation.
A dedicated channel strip with fader, cue, and on/off control is provided for all frequently-used input channels and the STEREO/MONO channels. This mixer can be comfortably operated even by users who are new to digital consoles.
The SELECTED CHANNEL section located at the left of the display lets you use the knobs to control the main parameters (gain, EQ, dynamics threshold, bus send levels, etc.) for the particular channel on which you're focusing. This section can be operated just like a module on an analog mixer.
In the center of the top panel is located the newly developed Centralogic section, which lets you control eight channels at once. You can control fader, cue, and on/off settings for the eight channels or DCA groups recalled to this section by pressing a single key. The display is a touch screen. You can turn functions on/off or select items simply by touching buttons or knobs in the screen.
Mix parameter settings, including head amp gain and phantom power for input channels, can be stored and recalled as "scenes." All faders on the panel are motorized moving faders, so that when you recall a scene, the previous fader locations are reproduced immediately.

### ■ Effects and graphic EQ that can be patched into a desired signal path

High-quality multi-effect processors are built in, with up to four available simultaneously. Effects such as reverb, delay, multiband compression, and various modulation effects can be routed via internal buses or inserted into the desired channel. 31-band graphic EQ and a newly developed Flex15GEQ are also provided, and can be inserted in any channel or output.
The Flex15GEQ allows you to adjust the gain for any fifteen of the thirty-one bands.
Since two GEQ units can be mounted in the same rack, a total of up to sixteen GEQ units can be used simultaneously. To use effects or graphic EQ, you mount them in the eight virtual racks shown in the touch screen. The currently-mounted modules can be seen at a glance, and you can switch modules and change input/output patching in an intuitive manner.

## ■ Cascade connections in the digital domain

A second M7CL unit or a digital mixer such as the Yamaha PM5D connected via a digital I/O card installed in a slot can be cascade-connected in the digital domain. Of the MIX buses, MATRIX buses, STEREO/MONO buses, and CUE bus, up to twenty-four buses can be cascaded individually.

## ■ Security functions that can be specified at user-level or system-level

The available functionality can be restricted for users other than the administrator, with three levels of security; Administrator, Guest, and User. Passwords can be specified for the administrator and users, preventing important settings from being changed accidentally.
Information specific to each user (user level, system settings, and user-defined key settings) can be stored on a USB storage device as a "user authentication key." By loading your own user authentication key from a USB storage device, you can instantly set up the ideal operating environment for yourself.

## ■ I/O card expansion

The rear panel provides three slots in which separately sold mini-YGDAI cards can be installed. AD cards, DA cards, or digital I/O cards can be installed in these slots to add inputs and outputs. If an external head amp unit (such as the Yamaha AD8HR) that supports a special protocol is connected to the REMOTE connector, the phantom power and gain settings of the external head amp can also be remotely controlled from the M7CL.

## ■ Propagation via SB168-ES

Using the Stage Box SB168-ES or similar product enables you to set up remote inputs and outputs away from the console, such as on stage, for an improved system design that features more flexible cabling. Using the SB168-ES along with the M7CL-48ES significantly facilitates necessary setups. You can easily set the SB168-ES's DIP switches and use the STAGE BOX SETUP function via the console's EXT-HA field to quickly set up head amp remote control, audio patches, etc.

# About the models

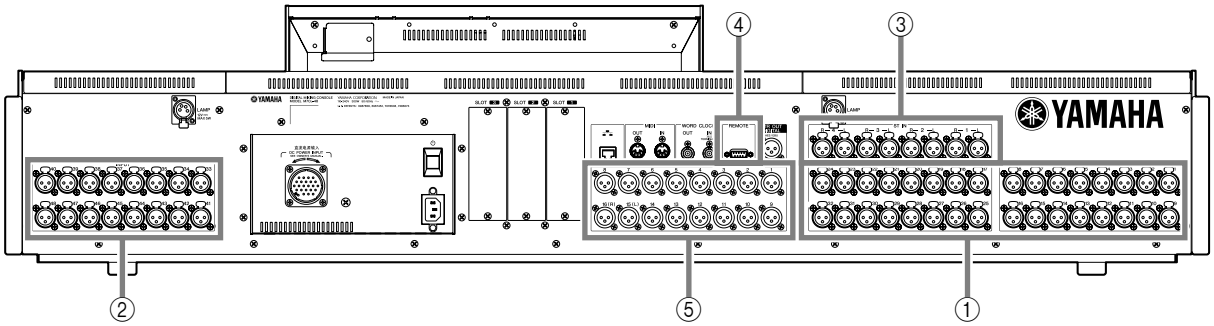


The M7CL is available in three models; the M7CL-48, the M7CL-32, and the M7CL-48ES. These models differ as follows.

## ■ M7CL-48

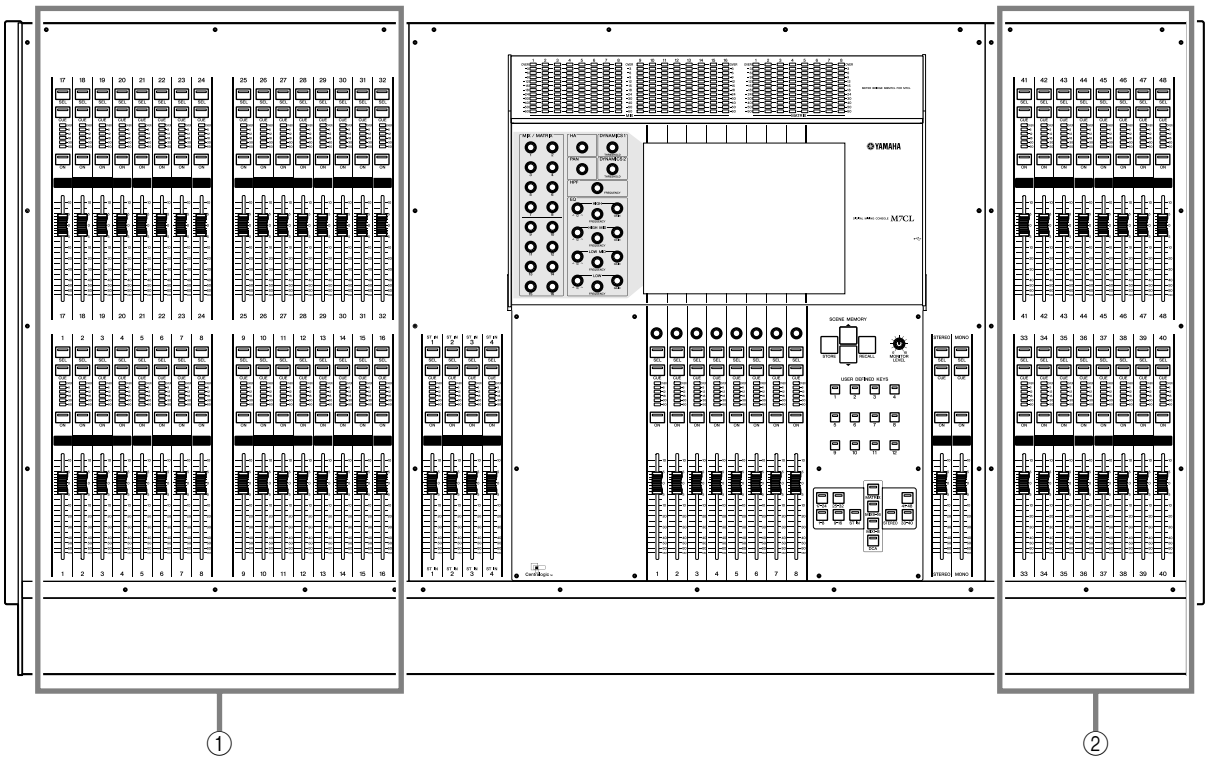
This model features 48 INPUT jacks, 4 ST IN jacks and 16 OMNI OUT jacks, enabling you to use 48 INPUT channels. It also features a REMOTE jack that enables you to remotely control an external head amp device that supports a special protocol.

INPUT jacks 1–32 are located at the right side of the rear panel, and INPUT jacks 33–48 are located at the left side of the rear panel.




① **INPUT jacks 1–32**
② **INPUT jacks 33–48**
③ **ST IN jacks 1–4**
④ **REMOTE jack**
⑤ **OMNI OUT jacks 1–16**

In addition to the channel strip for INPUT channels 1–32 located at the left side of the front panel, there is a channel strip for INPUT channels 33–48 located at the right side of the front panel.

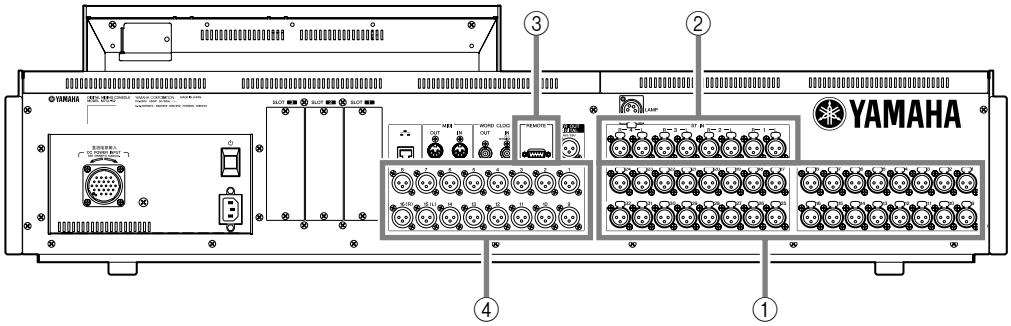



① **Channel strip for INPUT channels 1–32**
② **Channel strip for INPUT channels 33–48**

## ■ M7CL-32

This model features 32 INPUT jacks, 4 ST IN jacks and 16 OMNI OUT jacks, enabling you to use 32 INPUT channels. It also features a REMOTE jack that enables you to remotely control an external head amp device that supports a special protocol.

INPUT jacks 1–32 are located at the right side of the right panel, just as on the M7CL-48 model, but there are no INPUT jacks at the left side of the rear panel.



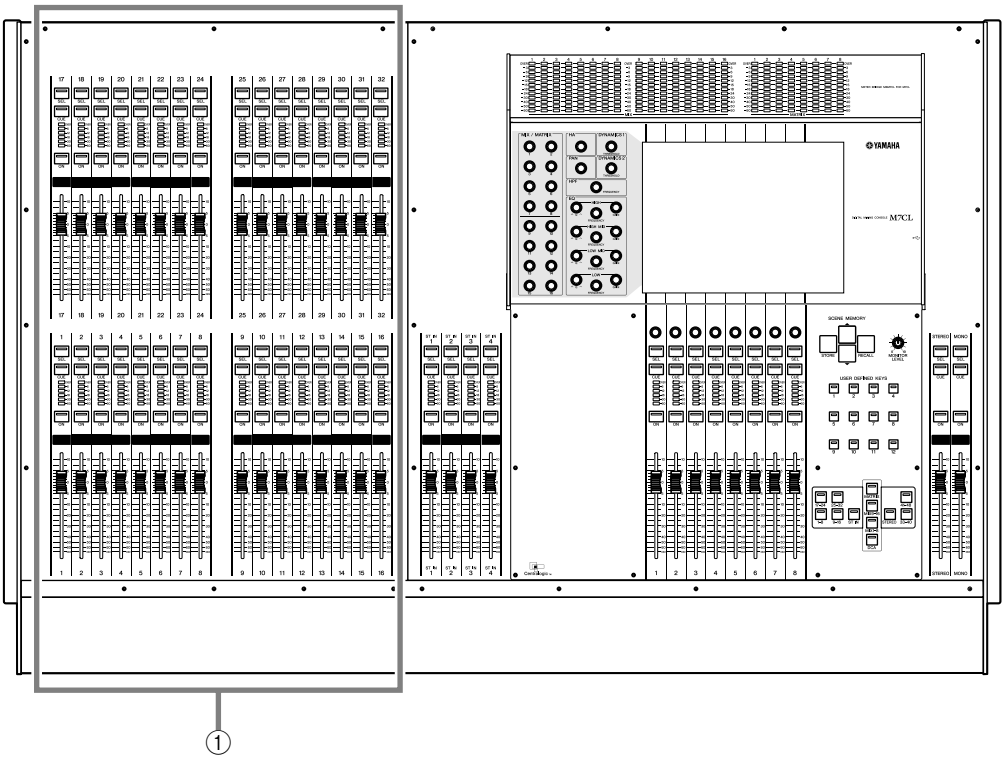

① **INPUT jacks 1–32**

② **ST IN jacks 1–4**

③ **REMOTE jack**

④ **OMNI OUT jacks 1–16**

The channel strip for INPUT channels 1–32 is located in the left side of the front panel, just as on the M7CL-48 model, but there is no channel strip for INPUT channels in the right side.




① **Channel strip for INPUT channels 1–32**

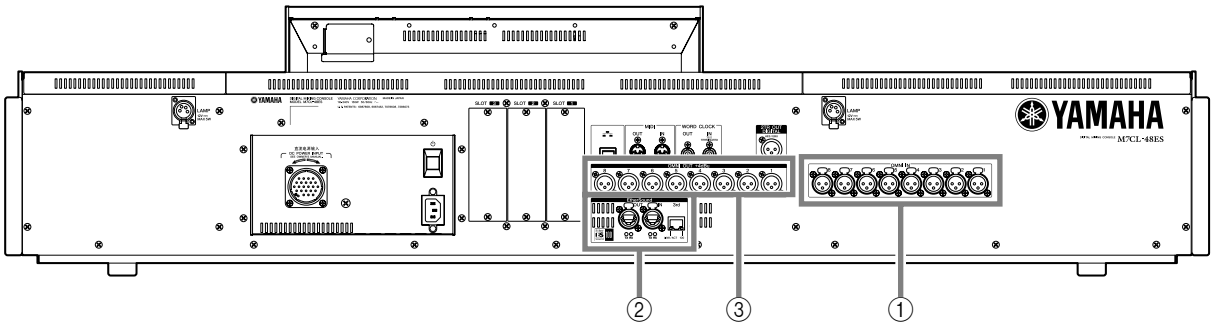
HINT

- *In this owner's manual, whenever there is a difference between the M7CL-32 model and the M7CL-48 model, specifications that apply only to the M7CL-48 model are enclosed in curly brackets { } (e.g., INPUT jacks 1–32 {1–48}).*

## ■ M7CL-48ES

This model features eight OMNI IN jacks, eight OMNI OUT jacks and EtherSound connectors, enabling you to use 48 INPUT and 24 OUTPUT channels.

You can expand the number of inputs and outputs by connecting up to three SB168-ES units or other equivalent EtherSound devices. You can remotely control via the EtherSound connector an external head amp device that supports a special protocol.

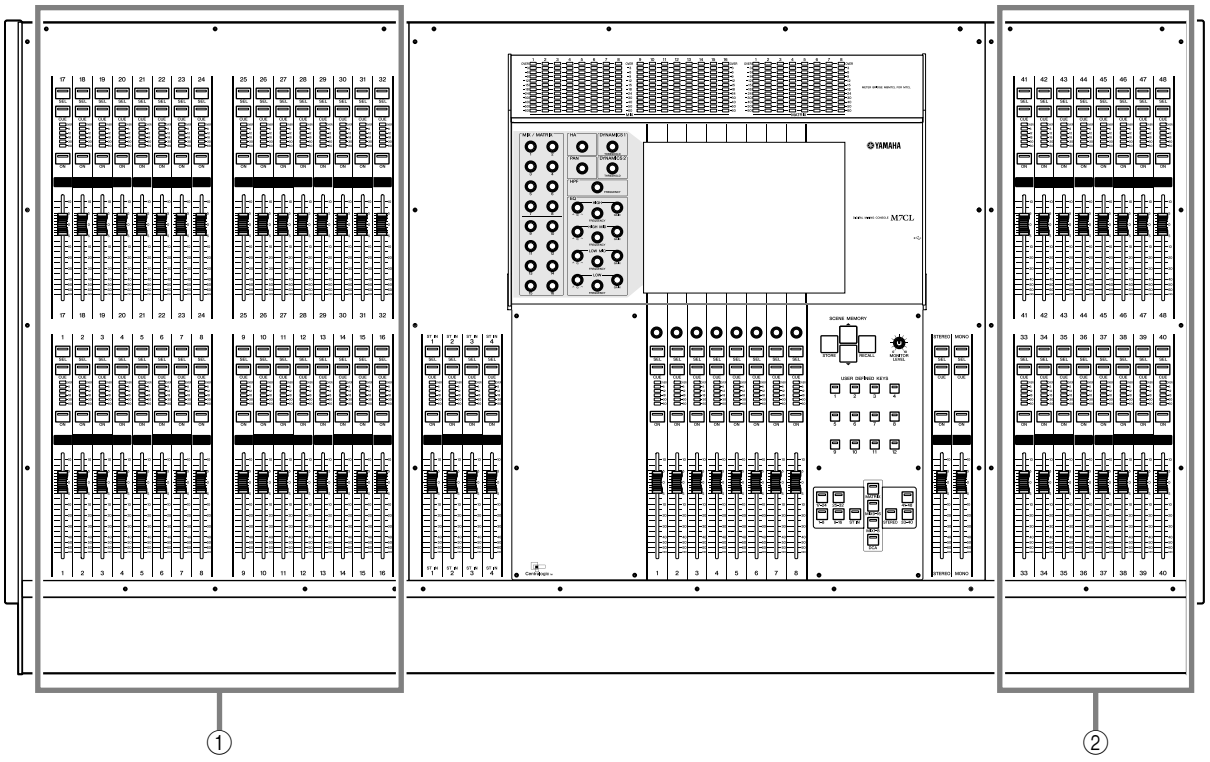



① **OMNI IN jacks 1–8**

② **EtherSound connectors**

③ **OMNI OUT jacks 1–8**

In addition to the channel strip for INPUT channels 1–32 located at the left side of the front panel, there is a channel strip for INPUT channels 33–48 located at the right side of the front panel.




① **Channel strip for INPUT channels 1–32**

② **Channel strip for INPUT channels 33–48**

# The M7CL's channel structure

The M7CL provides the following input channels and output channels.

## ■ Input channels

This section processes an input signal and sends it to various buses (STEREO, MONO, MIX, MATRIX). There are two types of input channel, as follows.

### ● INPUT channels

These channels are used to process monaural signals. By default, the input signals from monaural analog INPUT jacks (on the M7CL-32 and M7CL-48 models) or input signals from the EtherSound connector (on the M7CL-48ES model) are assigned to these channels.

### ● ST IN channels

These channels are used to process stereo signals. By default, the input signals from EFFECT RETURN 1–4 are assigned to these channels.

Signal assignments to the input channels can be changed as desired.

## ■ Output channels

This section mixes the signals sent from input channels etc., and sends them to the corresponding output ports or output buses. There are three types of output channel, as follows.

### ● MIX channels

These channels process the signals sent from input channels to the MIX buses, and send them from the output ports. These are used mainly to send signals to the monitor system or to external effects. The signals of MIX channels 1–16 can also be sent to the STEREO bus, MONO bus, or MATRIX buses.
When the M7CL is in the default state, the following output ports are assigned.

**• M7CL-32/48 port assignment**

| | |
|---|---|
| **MIX channels 1–12** | OMNI OUT jacks 1–12 |
| **MIX channels 13–16** | Rack 5–8 |
| **MIX channels 1–8** | Slot 1 output channels 1–8, 9–16 |
| **MIX channels 9–16** | Slot 2 output channels 1–8, 9–16 |

**• M7CL-48ES port assignment**

| | |
|---|---|
| **MIX channels 1–8** | Slot 1 output channels 1–8, 9–16 |
| **MIX channels 9–16** | Slot 2 output channels 1–8, 9–16 |
| **MIX channels 1–6** | EtherSound output channels 1–6 |
| **MIX channels 7–12** | EtherSound output channels 9–14 |
| **MIX channels 13–16** | Rack 5–8 |

### ● MATRIX channels

These channels process the signals that are sent from input channels, MIX channels, STEREO channel, and MONO channel to the MATRIX buses, and send them from the output ports. Using the STEREO and MONO buses, different combinations of signals and mix balances can be sent out from the M7CL.
When the M7CL is in the default state, the following output ports are assigned.

**• M7CL-32/48 port assignment**

| | |
|---|---|
| **MATRIX channels 1/2** | OMNI OUT jacks 13/14 |
| **MATRIX channels 1–8** | Slot 3 output channels 1–8, 9–16 |

**• M7CL-48ES port assignment**

| | |
|---|---|
| **MATRIX channels 1–8** | Slot 3 output channels 1–8, 9–16 |
| **MATRIX channels 1–6** | EtherSound output channels 17–22 |
| **MATRIX channels 1–4** | OMNI OUT 1–4 |

### ● STEREO channel / MONO channel

These channels process the signals that are sent from the input channels or MIX channels, and send them to the corresponding output port. These channels are used as the main stereo output and monaural output.
The STEREO channel and MONO channel can be used either to output independent signals, or for three-channel L/C/R playback.
When the M7CL is in the default state, the following output ports are assigned.

**• M7CL-32/48 port assignment**

| | |
|---|---|
| **STEREO channel L** | OMNI OUT jack 15, 2TR OUT DIGITAL jack L |
| **STEREO channel R** | OMNI OUT jack 16, 2TR OUT DIGITAL jack R |
| **MONO channel** | No assignment |

**• M7CL-48ES port assignment**

| | |
|---|---|
| **STEREO channel L** | OMNI OUT jack 7, 2TR OUT DIGITAL jack L, EtherSound output channels 7,15, and 23 |
| **STEREO channel R** | OMNI OUT jack 8, 2TR OUT DIGITAL jack R, EtherSound output channels 8,16, and 24 |
| **MONO channel** | No assignment |

Port assignments to the output channels can be changed as desired.

# About the MIX bus types (VARI / FIXED)

The sixteen MIX buses provided on the M7CL can be assigned either as VARI or FIXED types in pairs of adjacent odd-numbered/even-numbered buses (→ p. 234). Each type has the following characteristics.

**● VARI**

This type allows the send level of the signal sent from the input channels to the MIX bus to be varied. The point at which the signal is sent from the input channel to a VARI type MIX bus can be chosen from before the EQ, before the fader, or after the [ON] key (after the fader). This type is used mainly for sending the signal to a monitor system or external effect.

**● FIXED**

With this type, the send level of the signal sent from the input channels to the MIX bus is fixed to unity (0 dB). The signal sent from an input channel to a FIXED type MIX bus is taken from immediately after the [ON] key (after the fader). This type is used mainly when you want to distribute signals to an external device at the same mix balance as the STEREO/MONO buses.

# About word clock

"Word clock" refers to the clock that provides the basis of timing for digital audio signal processing.
Normally, one device transmits a reference word clock signal, and the other devices receive this word clock signal and synchronize to it.
In order to transmit or receive digital audio signals to or from an external device via a digital I/O card installed in a slot of the M7CL or EtherSound jacks of the M7CL-48ES. The word clock must be synchronized between the devices. Be aware that if the word clock is not synchronized, the signal will not be sent correctly, or there may be unpleasant noise. (For details on synchronizing the M7CL's word clock with an external device → p. 230).

# Conventions in this manual

In this manual, switch-type controls on the panel are called "keys." Of the control knobs on the panel, those that turn from a minimum value to a maximum value are called "knobs," while those that turn endlessly are called "encoders."

Controls located on the panel are enclosed in square brackets [ ] (e.g., [CUE] key) in order to distinguish them from the virtual buttons and knobs displayed in the screen. For some controls, the name of the section is given before the [ ] (e.g., SCENE MEMORY [STORE] key).

Whenever there is a difference between the M7CL-32 model and the M7CL-48 model, specifications that apply only to the M7CL-48 model are enclosed in curly brackets { } (e.g., INPUT jacks 1–32 {1–48}).

# About the firmware version

You can view the firmware version number in the SETUP screen (→ p. 229).
You can also download the most recent firmware version from the website.

**http://www.yamahaproaudio.com/downloads/**

When you are using the M7CL-48ES along with the SB168-ES, the SB168-ES firmware must be the following version or higher:

SB168-ES unit firmware : V1.1
EtherSound module firmware : C16

For information on checking the version number and updating the firmware, please refer to the "SB168-ES Firmware Update Guide."

The SB168-ES firmware can be updated from a computer connected to the rear-panel NETWORK connector. Information about the latest versions and firmware downloads are available on the Yamaha pro audio website SB168-ES product page:

http://www.yamahaproaudio.com/products/

The EtherSound module firmware can be updated from a computer connected to the EtherSound connector. Information about the latest versions and firmware downloads are available at the AuviTran website:

http://www.auvitran.com/
view.php?downloads_updates.php

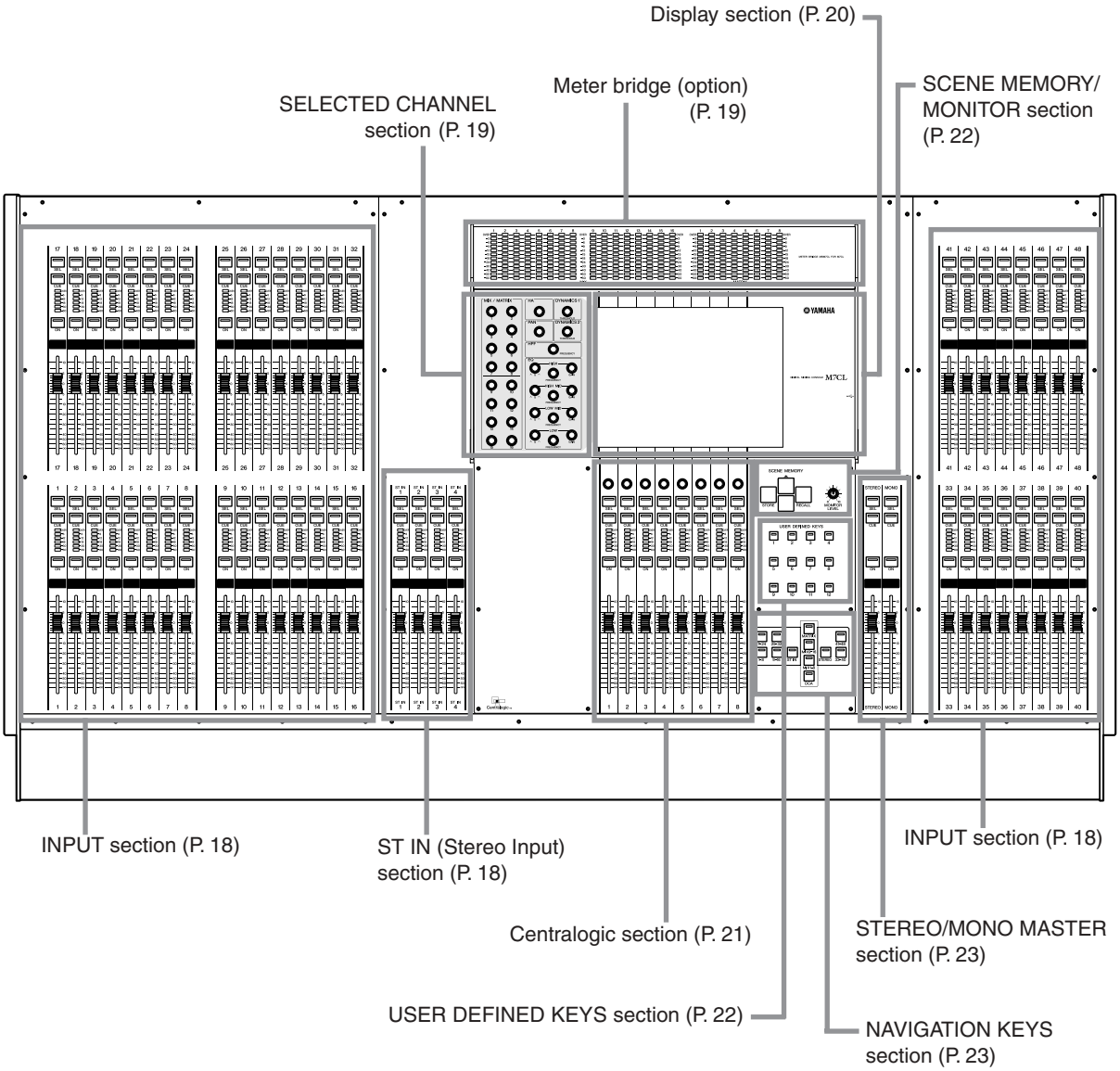
# ◆ Chapter 2 ◆
# Panels and controls



This chapter explains the names and functions of each part of the M7CL.

## Top panel

The top panel of the M7CL is divided into the following sections.

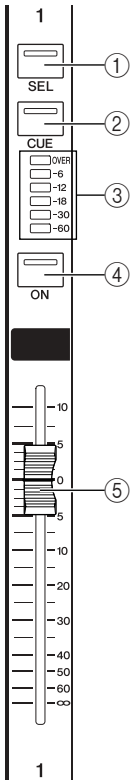

Display section (P. 20)
SELECTED CHANNEL section (P. 19)
Meter bridge (option) (P. 19)
SCENE MEMORY/ MONITOR section (P. 22)
INPUT section (P. 18)
ST IN (Stereo Input) section (P. 18)
Centralogic section (P. 21)
USER DEFINED KEYS section (P. 22)
INPUT section (P. 18)
STEREO/MONO MASTER section (P. 23)
NAVIGATION KEYS section (P. 23)

NOTE

- *This illustration shows the top panel of the M7CL-48/48ES. The M7CL-32 does not have the INPUT section at the right (channels 33–48).*

## ■ INPUT section

In this section you can control the main parameters of monaural input channels 1–32 {1–48}.




### ① [SEL] key

These keys select the channel to be controlled. When you press this key to make the LED light, that channel will be selected for control in the SELECTED CHANNEL section and in the touch screen.
In SENDS ON FADER mode, the [SEL] keys of all channels will light.

### ② [CUE] key

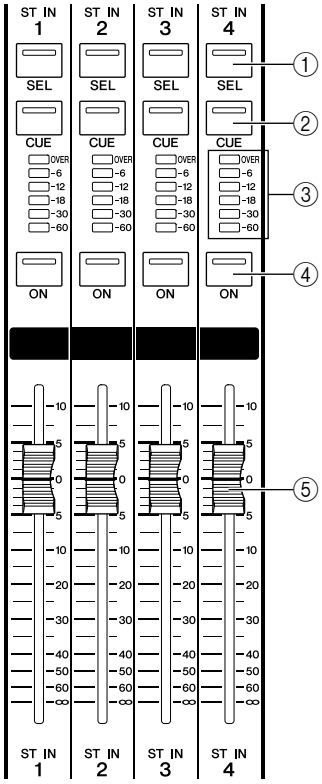
These keys select the channel to be cue-monitored. If cue is on, the LED will light.

### ③ Meter LEDs

These LEDs indicate the input level of the channel.

## ■ ST IN (Stereo Input) section

In this section you can control the principal parameters for the stereo ST IN channels 1–4. With the exception that the object of control will alternate between the L and R channels each time you press the [SEL] key, these controls operate in the same way as for the INPUT channels.




### ④ [ON] key

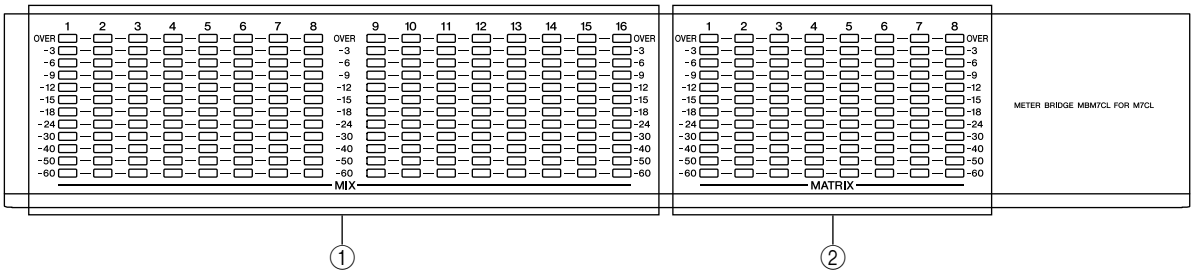
This switches the channel on/off. If a channel is on, the key LED will light. In SENDS ON FADER mode, this is an on/off switch for the signal sent from each channel to the currently selected MIX/MATRIX bus.

### ⑤ Fader

Adjusts the input level of the channel. In SENDS ON FADER mode, this adjusts the send level of the signal from each channel to the currently selected MIX/MATRIX bus.

## ■ Meter bridge (option)

If an optional MBM7CL meter bridge is installed, the MIX/MATRIX channel levels can be monitored at all times. The monitoring position can be selected from PRE EQ (immediately before attenuator), PRE FADER (immediately before the fader), or POST ON (immediately after the [ON] key).




### ① MIX meters

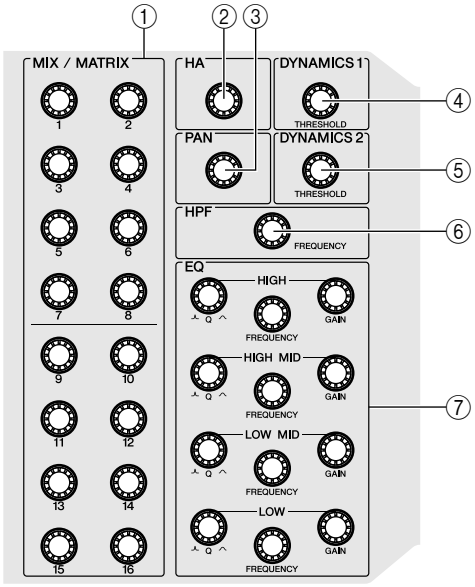
These indicate the level of MIX channels 1–16.

### ② MATRIX meters

These indicate the level of MATRIX channels 1–8.

## ■ SELECTED CHANNEL section

In this section you can control the mix parameters for the currently selected input channel or output channel.




### ① [MIX/MATRIX] encoders

**● When an input channel is selected**

This adjusts the send level of the signal sent from that channel to the MIX/MATRIX buses.

**● When a MIX/STEREO/MONO channel is selected**

This adjusts the send level of the signal sent from the selected MIX/STEREO/MONO channel to the MATRIX buses.

**● When a MATRIX channel is selected**

This adjusts the send level of the signal sent from each MIX channel to the selected MATRIX bus.

**● When SENDS ON FADER mode**

Push in an encoder to select the corresponding destination bus.

NOTE

*• If the SIGNAL TYPE of the destination bus is set to STEREO, use the left encoders to adjust PAN and the right encoders to adjust the send level.*

### ② [HA] encoder

Adjusts the head amp gain of an input channel. This does nothing if another type of channel is selected.

NOTE

*• The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*

### ③ [PAN] encoder

**● When an input channel is selected**

This adjusts the panning of the signal that is sent from the selected channel to the L/R channels (or L/C/R channels) of the STEREO bus.

NOTE

*• You can link this setting to the PAN setting for signals sent to a MIX or MATRIX for which the BUS TYPE is set to STEREO. (→ p. 234)*

**● When a ST IN channel is selected**

This adjusts the left/right balance of the signals that are sent from the selected two channels to the STEREO bus.

**● When a MIX channel (MONO x 2) is selected**

This adjusts the panning of the signal that is sent from the selected channel to the L/R channels of the STEREO bus.

**● When a MIX channel (STEREO) is selected**

This adjusts the left/right balance of signals that are sent from the two selected channels to the L/R channels of the STEREO bus or the left/right balance of the output signals.

**● When a MATRIX channel (MONO x 2) is selected**

This encoder will be disabled.

**● When a MATRIX channel (STEREO) is selected**

This adjusts the left/right balance of signals that are output from the two selected channels.

**● When a STEREO channel is selected**

This adjusts the left/right balance of the signals that are output from the L/R channels of the STEREO bus.

④ **[DYNAMICS 1] encoder**

● **When an input channel is selected**

Adjusts the THRESHOLD parameter of the gate, etc.

● **When a MIX, MATRIX, or STEREO/MONO channel is selected**

Adjusts the THRESHOLD parameter of the compressor, etc.

⑤ **[DYNAMICS 2] encoder**

● **When an input channel is selected**

Adjusts the THRESHOLD parameter of the compressor, etc.

● **When a MIX, MATRIX, or STEREO/MONO channel is selected**

No function.

⑥ **[HPF] encoder**

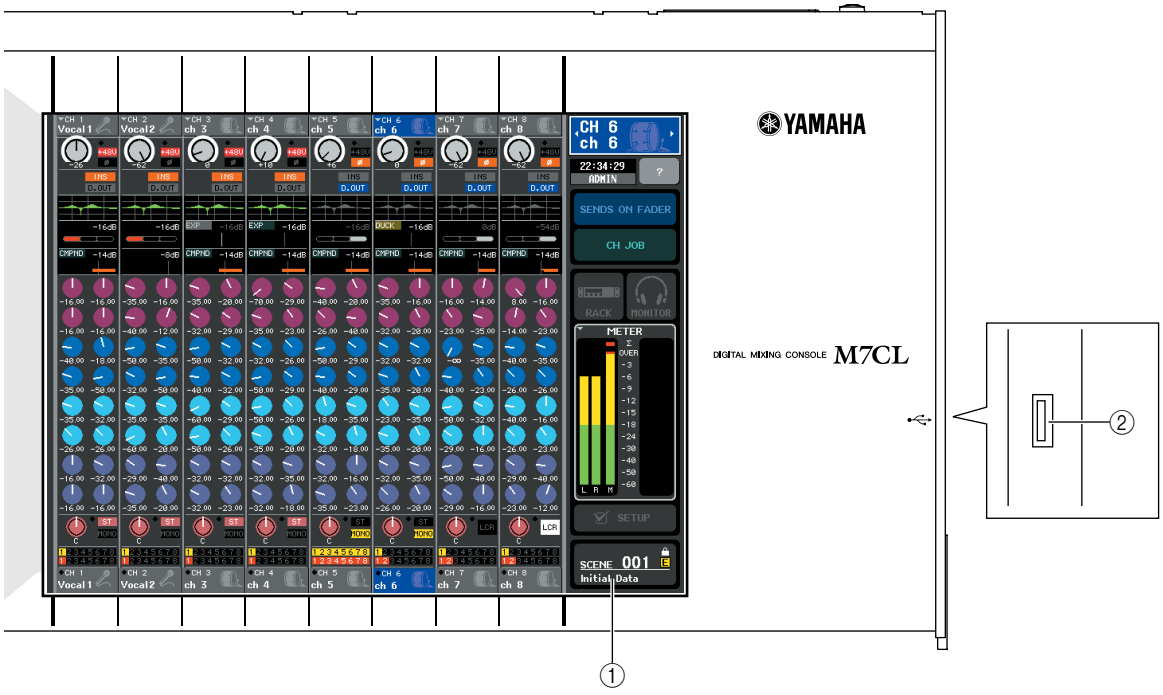
Adjusts the HPF cutoff frequency for an input channel. This does nothing for other types of channel.

⑦ **EQ [Q], EQ [FREQUENCY], EQ [GAIN] encoders**

For each band of the four-band EQ, these adjust the Q, center frequency (cutoff frequency), and gain.
Press the EQ [Q] and EQ [GAIN] encoders simultaneously to reset the GAIN setting for each band to the default setting (0.0 dB).

## ■ Display section

This is a touch screen that you can operate by touching the surface of the screen. A USB connector is provided on the right side of the display.




① **Display (touch screen)**

This display shows the information you need to operate the M7CL, and lets you make system-wide settings and control mix parameters for input and output channels. Since this is a touch screen, you can use your finger on the screen to select menus or set parameters. However, you cannot press two or more locations to operate them simultaneously.

NOTE

*• If the touch screen becomes dirty, wipe it with a soft dry cloth.*

**⚠ CAUTION**

***• Never use a sharp or pointed object such as your fingernail to operate the touch screen. Doing so may scratch the screen and render the touch screen inoperable.***

② **USB connector**

You can connect a USB storage device here to save/load internal data. USER KEY data that determines the user level can be saved on a USB storage device to limit the functionality that can be operated by each user.

NOTE

*• You can connect a USB storage device to the USB connector. However, operation is guaranteed only with USB flash memory.*

### ■ USB storage device capacities and formats

The operation of storage media with capacities of up to 16GB has been verified. (However, this does not necessarily guarantee the operation of all USB storage media.) The FAT12, FAT16 and FAT32 formats are supported. On the M7CL V1.12 or higher, storage media with a capacity of 4GB or larger will be formatted in FAT32 and storage media with a capacity of 2GB or smaller will be formatted in FAT16.

### ■ Prevention of accidental erasure

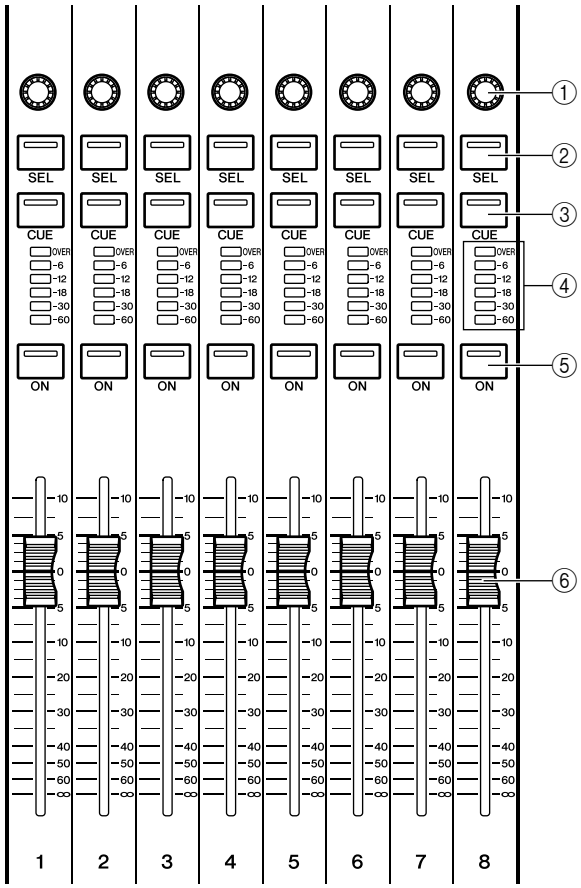
Some USB storage devices have a write protect setting that lets you prevent data from being erased accidentally. If your storage device contains important data, it's a good idea to use the write protect setting to prevent accidental erasure.
On the other hand, you'll need to make sure that your USB storage device's write protect setting is turned off before you save data.

***⚠ CAUTION***

- ***An ACCESS indicator is shown in the function access area while data is being accessed (saved, loaded, or deleted). Do not disconnect the USB connector or power-off the M7CL while this indicator is shown. Doing so may damage your storage media, or may damage the data in the M7CL or on your media.***

## ■ Centralogic section

In this section you can control a group of (up to) eight channels or DCA groups selected in the NAVIGATION KEYS section.




### ① Multi-function encoders

According to the type of screen that is currently selected, these encoders control the knobs selected in the touch screen.

### ② [SEL] key

These keys select the channel to be controlled. When you press this key to make the LED light, that channel will be selected for control in the SELECTED CHANNEL section and in the touch screen.

### ③ [CUE] key

These keys select the channel to be cue-monitored. If cue is on, the LED will light.

### ④ Meter LEDs

These LEDs indicate the input/output level of the channel.

### ⑤ [ON] key

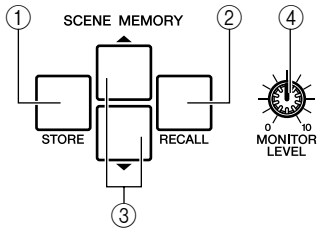
This switches the channel on/off. If a channel is on, the key LED will light.

### ⑥ Fader

This adjusts the input/output level of the channel. You can also make internal settings (→ p. 177) so that these faders are used as controllers to adjust the gain of each GEQ band.

## ■ SCENE MEMORY/MONITOR section

In this section you can perform operations for scene memory and monitoring.




### ① SCENE MEMORY [STORE] key

This key stores the current mix parameter settings into a dedicated scene memory.

### ② SCENE MEMORY [RECALL] key

This key recalls previously-saved settings from a scene memory.

### ③ SCENE MEMORY [▲]/[▼] keys

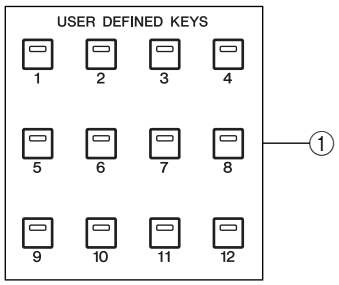
Use these keys to select the scene number that you want to store or recall. The number of the currently selected scene is shown in the function access area in the right of the touch screen. You can press the [▲]/[▼] keys simultaneously to return to the current scene number.

### ④ [MONITOR LEVEL] knob

Adjusts the signal level of the monitor output. If the PHONES LEVEL LINK function is turned on in the MONITOR screen, this will also adjust the level of the front panel [PHONES] jack.

## ■ USER DEFINED KEYS section

These keys execute the functions that have been assigned by the user.

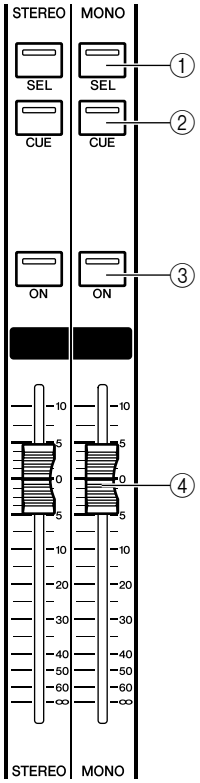



### ① User defined keys [1]–[12]

These keys execute the functions that have been assigned by the user (scene changes, switching the talkback or internal oscillator on/off, etc.).

## ■ STEREO/MONO MASTER section

In this section you can control the principal parameters of the STEREO/MONO channels.




**① [SEL] key**
This key selects the channel to be controlled. When you press this key to make the LED light, that channel will be selected for control in the SELECTED CHANNEL section and in the touch screen.
For the STEREO channel, the selected object of control will alternate between the L and R channels each time you press the [SEL] key.

**② [CUE] key**
This key selects the channel to be cue-monitored. If cue is on, the LED will light.

**③ [ON] key**
This key switches the channel on/off. If a channel is on, the key LED will light. If the FADER ASSIGN MODE for MONITOR FADER is set to MONO or STEREO, this key switches the monitor output on or off.

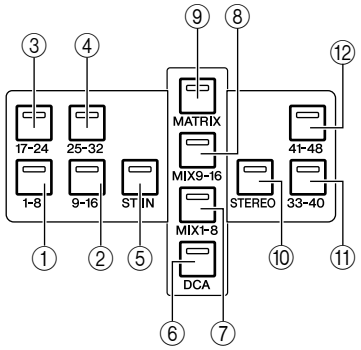
**④ Fader**
This adjusts the output level of the channel. If the FADER ASSIGN MODE for MONITOR FADER is set to MONO or STEREO, this fader adjusts the monitor output level.

## ■ NAVIGATION KEYS section

In this section you can select the channels that will be controlled by the Centralogic section and in the touch screen.

NOTE

*• If you press and hold a navigation key for two seconds or longer, that key will blink. At this time, only the object of control for the Centralogic section will be changed to the corresponding channels and fixed. If you press a different navigation key while the first key is blinking, only the object of control in the touch screen will be changed.*




**① [IN 1-8] key**
**② [IN 9-16] key**
**③ [IN 17-24] key**
**④ [IN 25-32] key**
These keys select INPUT channels 1–8, 9–16, 17–24, and 25–32 respectively.

**⑤ [ST IN] key**
This key selects ST IN channels 1–4.

**⑥ [DCA] key**
This key selects the DCA groups.

**⑦ [MIX 1-8] key**

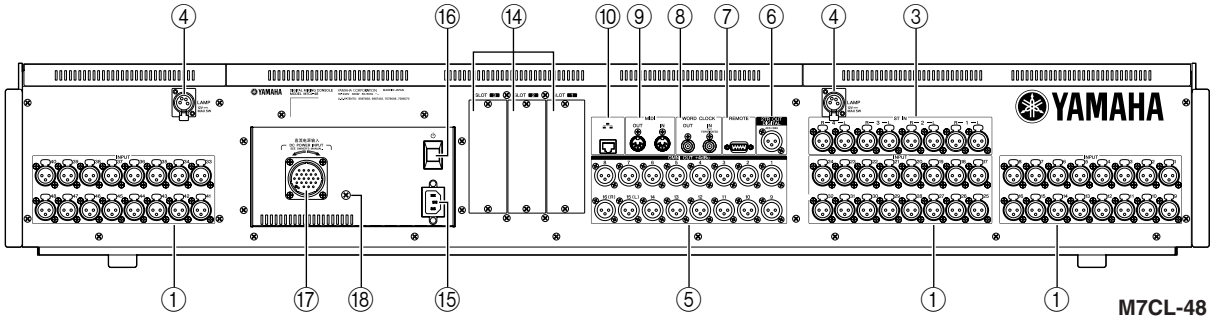
**⑧ [MIX 9-16] key**
These keys select MIX channels 1–8 and 9–16 respectively.

**⑨ [MATRIX] key**
This key selects MATRIX channels 1–8.

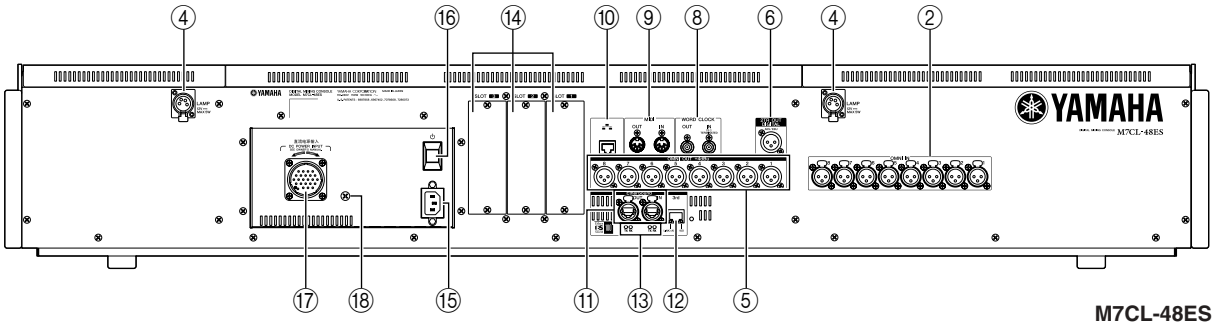
**⑩ [STEREO] key**
This key assigns the STEREO channel L/R and the MONO channel to modules 1–3 of the Centralogic section. In this case, modules 4–8 are not used.

**⑪ [IN 33-40] key (M7CL-48/48ES only)**
**⑫ [IN 41-48] key (M7CL-48/48ES only)**
These keys select INPUT channels 33–40 and 41–48 respectively.

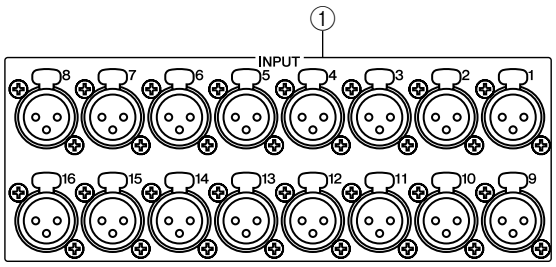
# Rear panel




M7CL-48

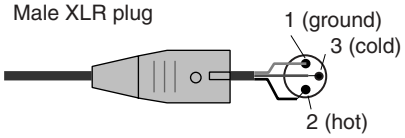


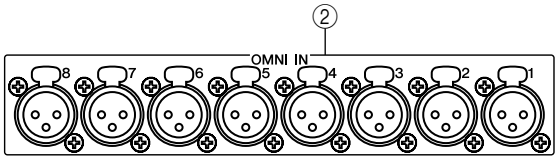

M7CL-48ES




### ① INPUT jacks (M7CL-32/48)

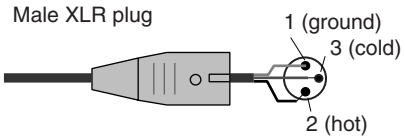
These are balanced XLR-3-31 female input jacks for inputting analog audio signals from line level devices or microphones. Nominal input level is -62 dBu to +10 dBu.

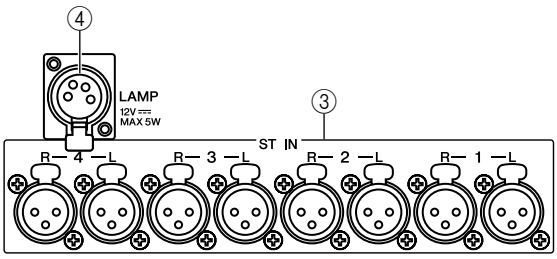



### ② OMNI IN jacks (M7CL48-ES)

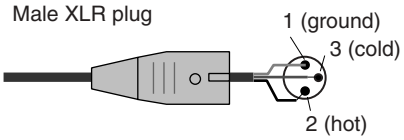
These are balanced XLR-3-31 female input jacks for inputting analog audio signals from line level devices or microphones. Nominal input level is -62 dBu to +10 dBu.





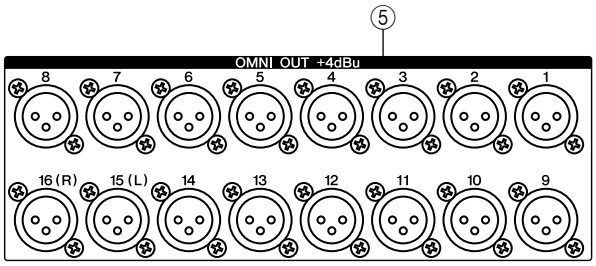

### ③ ST IN jacks 1–4 (M7CL-38/48)

These are balanced XLR-3-31 female input jacks for inputting analog audio signals from line level devices or microphones. Nominal input level is -62 dBu to +10 dBu.



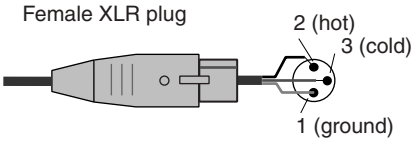

### ④ LAMP connector

This is a four-pin female XLR output jack that supplies power to a separately sold gooseneck lamp (such as the Yamaha LA1L). (The M7CL-32 features this connector at one location.)



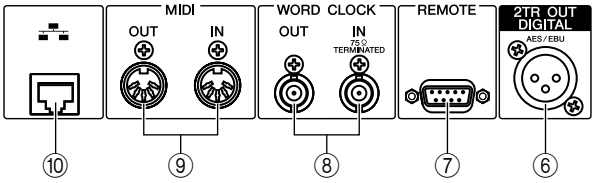

### ⑤ OMNI OUT jacks

These are XLR-3-32 male output jacks that output analog audio signals. These are used mainly to output the signals of MIX channels or MATRIX channels. Nominal output level is +4 dBu.




NOTE

- *Although OMNI OUT jacks have a nominal input/output level of +4 dBu (maximum level +24 dBu), an internal switch allows this to be changed to -2 dBu (maximum level +18 dBu) if necessary. (A fee will be charged for this procedure.) For details, contact to your Yamaha dealer.*




### ⑥ 2TR OUT DIGITAL jack

This is an AES/EBU (XLR-3-32 male) jack that outputs the digital audio signal of a desired channel in AES/EBU format. This is used mainly to output the signal of the STEREO/MONO channel.

### ⑦ REMOTE connector (M7CL-32/48)

This is a D-sub 9-pin male connector for remotely controlling an external head amp device (e.g., Yamaha AD8HR) that supports a special protocol. It can also be used to transmit/receive MIDI messages to/from an external device. Refer to the pin assignment table for information on pin assignments. (→ p. 298)

On the M7CL-48ES, the EtherSound connector duplicates the function of this connector.

### ⑧ WORD CLOCK IN/OUT connectors

These are BNC connectors used to transmit/receive word clock signals to/from an external device. The WORD CLOCK IN connector is internally terminated by 75 ohms.

### ⑨ MIDI IN/OUT connectors

These connectors are used to transmit and receive MIDI messages to and from external MIDI devices. The MIDI IN connector receives messages from an external device, and the MIDI OUT connector transmits messages from the M7CL. These are used mainly to record M7CL parameter operations or scene/library selections on an external device, or to control M7CL parameters from an external device.

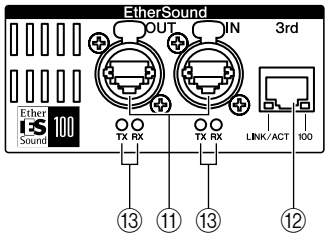
### ⑩ NETWORK connector

This RJ-45 connector allows the M7CL to be connected to a computer via an Ethernet cable (CAT5e or higher recommended). This is used mainly to control mix parameters or edit scene memories and libraries from the dedicated "M7CL V3 Editor" application program.

NOTE

- *The DME-N Network Driver required for connection to the Ethernet connector, the Studio Manager required for starting up M7CL V3 Editor, and the M7CL V3 Editor itself can be downloaded from the following Yamaha website.*

  **http://www.yamahaproaudio.com/downloads/**




### ⑪ EtherSound [IN]/[OUT] connectors

These EtherCon (RJ-45) connectors allow the M7CL-48ES to be connected to an SB168-ES or another EtherSound device via Ethernet cables (CAT5e or higher recommended). The [IN] and [OUT] connectors also allow daisy chain or ring connection of EtherSound devices. Either a straight or cross Ethernet cable can be used.

NOTE

- *The use of Ethernet cables with Neutrik EtherCon® compatible RJ-45 plugs is recommended. Standard RJ45 plugs can also be used.*
- *Use an STP (shielded twisted pair) cable to prevent electromagnetic interference. Make sure that the metal parts of the plugs are electrically connected to the STP cable shield by conductive tape or comparable means.*
- *Refer to the following EtherSound website for information on the length of cable that can be used.*

  **http://www.ethersound.com/**

### ⑫ [3rd] connector

This RJ-45 connector allows the M7CL-48ES to be connected via an Ethernet cable (CAT5e or higher recommended) to a computer on which the AVS-ES Monitor application has been installed. Either a straight or cross Ethernet cable can be used. The [LINK/ACT] indicator lights when the console is connected to a computer, and the indicator flashes when the console is communicating with the computer. The [100] indicator lights when the console is connected to a computer via 100BASE-TX.

NOTE

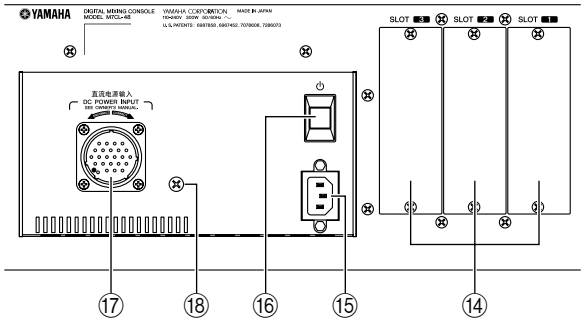
- *Use an STP (shielded twisted pair) cable to prevent electromagnetic interference (USA, Canada, Korea).*

### ⑬ IN/OUT [TX]/[RX] indicator

The appropriate indicator flashes when data is transmitted (TX) from or received (RX) at the EtherSound [IN]/[OUT] connectors.

NOTE

- *All four indicators will flash when you click the M7CL-48ES [Identify] button in the AVS-ES Monitor application, and will continue to flash until you click the button a second time.*



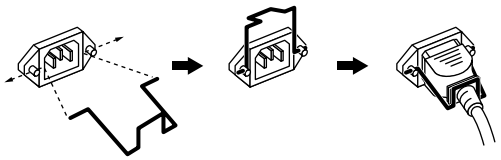

### ⑭ Slots 1–3

These slots allow separately sold mini-YGDAI I/O cards to be installed to expand the input/output ports.

### ⑮ AC IN (power supply input) connector

Connect the included power cord to this connector. Securely clamp the AC power cord using the cord clamp to prevent accidental disconnection from the AC IN connector.

**Attaching the cord clamp**



### ⑯ Power switch ⏻

When the power switch is set to ▬ , the power to the unit is on. When the power switch is set to ▮ , the power to the unit is off.

**⚠ CAUTION**

- ***Turning the power switch on and off rapidly and repeatedly may cause malfunction. After turning the power off, wait for about six seconds before turning it on again.***

### ⑰ DC POWER INPUT connector

You can connect the separately sold PW800W power supply here as a backup external power supply. If the PW800W is connected, the M7CL will continue receiving power from the PW800W even if its own internal power supply shuts down due to a problem.

**⚠ CAUTION**

- ***If you connect the PW800W, you must be sure to first power-off both the M7CL and the PW800W. Then use the optional power supply cable (PSL360) to make the connection. Failure to observe this will cause malfunctions or electric shock.***

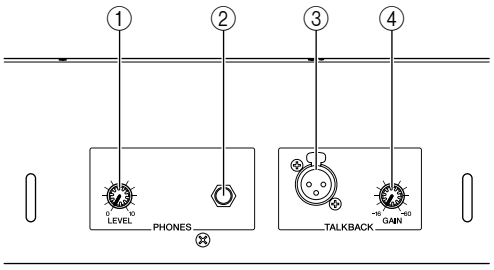
HINT

- *If the PW800W is connected, the M7CL will operate correctly whether its own internal power supply and the PW800W are both turned on, or whether just one of these is turned on.*
- *If both power supplies are on, and an abnormality is detected in one of the power supplies, the M7CL will automatically switch to the other power supply. If this occurs, the touch screen will show a message to indicate this.*

### ⑱ Grounding screw

The AC power cord is a 3-wire type. If the AC outlet used is earthed (grounded), this device will be properly earthed as well.
Also, grounding the screw sometimes reduces hum and interference noise.

# Under the front pad




### ① PHONES LEVEL knob
Adjusts the level of the signal that is output from the PHONES OUT jack.

### ② PHONES OUT (headphone output) jack
This headphone jack lets you monitor the MONITOR OUT or CUE signal.

### ③ TALKBACK jack
This is a balanced XLR-3-31 jack to which a talkback mic can be connected. You can make settings in the screen to supply +48V phantom power to this jack. This is used to send instructions from the mixer operator to the desired output channel.

### ④ TALKBACK GAIN knob
This adjusts the input level of the mic connected to the TALKBACK jack.

# ◆ Chapter 3 ◆
# Basic operation of the M7CL

This chapter explains the M7CL's user interface and its basic operations.



## Basic operations in the top panel / touch screen

This section explains the basic procedures you can perform in the M7CL's top panel and touch screen. In general, you will operate the M7CL using the appropriate combination of the operations explained here.

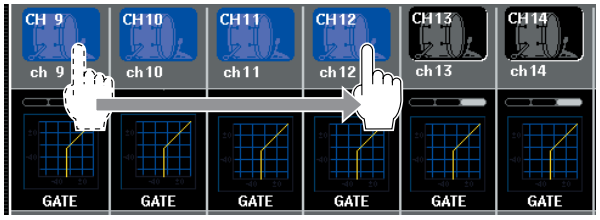
### Pressing the touch screen

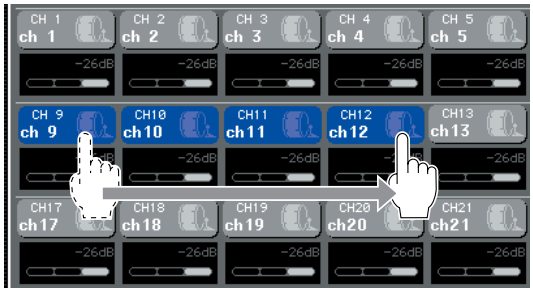
Place your fingertip on a button, knob, or field in the touch screen, and press lightly. You will mainly use this operation to switch screens and pages, to select the parameter to be operated, and to turn a button on/off. Depending on the type of button, the number may increase or decrease depending on the location you press.

### Multiple selection (specifying a range)

While pressing your finger on the touch panel, move it in the left/right direction to specify a range within a character string. You will use this mainly when assigning a name to a scene or library.

For the channel select buttons, you can select multiple buttons by moving your finger across the touch screen while continue to press.




HINT

- *This makes it easy to select a range of buttons to be turned on/off together.*

### Special operations for keys

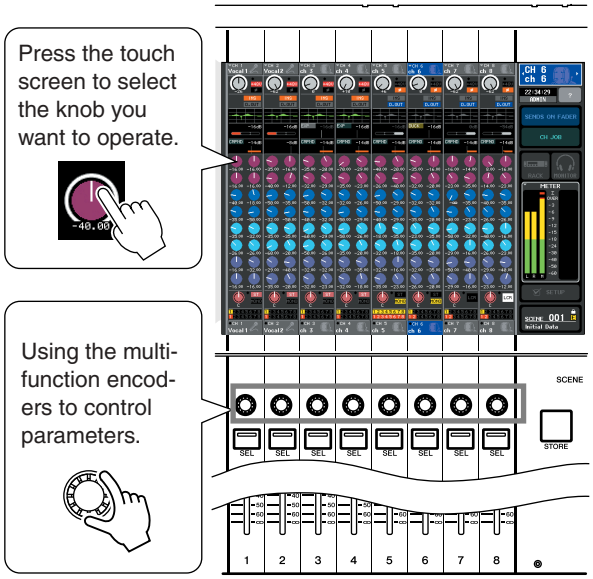
Normally you will press a top panel key once, but in some cases you can access a special function by rapidly pressing a key twice in succession.

### Encoder operations

Normally, encoders are turned left/right to change the value of the corresponding parameter. By pressing an encoder you can recall a specific screen. For some parameters, you can adjust the value in finer steps (greater detail) by turning the encoder while pressing it.

## Multifunction encoder operations

Multifunction encoders 1–8 are used to operate the knobs selected for operation in the touch screen (→ p. 31). When you press to select a knob that can be controlled by the multifunction encoders, a thick line appears around it. (Normally, a knob of this type corresponds to the multifunction encoder located immediately below that knob, allowing you to control up to eight parameters simultaneously.) While a knob is selected, turning the multifunction encoder located immediately below that knob will change the value of the corresponding parameter.
In the SCENE LIST screen, you can make a multiple selection by turning a multifunction encoder while pressing it.




# The on-screen user interface

Operations such as mixing and adjusting the sound of each channel are performed using the top panel faders, keys, and encoders. However to make more detailed settings, you will need to access the appropriate function and edit the parameter values in the touch screen. The section below explains the various user interface components shown in the touch screen, and how to use them.

## Tabs

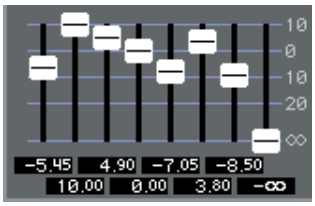
Some screens shown in the display consist of multiple pages. In screens of this type, the page name is shown at the top and bottom. The area of the display showing a page name is called a “tab.” Tabs are used to switch between pages within the same screen.

## Buttons

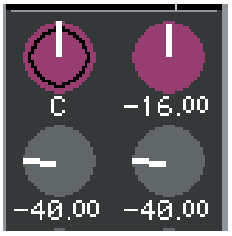
Buttons in the display are used to execute specific functions, to switch parameters on/off, or to select one of multiple choices. Buttons that perform an on/off operation are shown in a color such as white, yellow, or green while turned on, and blue or black while they are turned off. When you press a button that has a ▼ symbol, a separate window will open, allowing you to make detailed settings.

## Faders / Knobs

Faders in the screen are used mainly for visual confirmation of the levels of the corresponding channels, and will move in tandem when you operate the top panel faders. The current value is also shown in numerical form immediately below the fader.



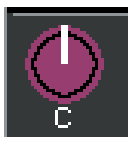

Knobs in the screen provide visual confirmation of the value of the corresponding parameter.




Most knobs are linked with operations of the SELECTED CHANNEL section encoders or the multifunction encoders. The current value is also shown in numerical form immediately below the knob.
When a knob that can be operated by the multifunction encoders (i.e., knobs other than in the SELECTED CHANNEL VIEW screen) is pressed once, a heavy frame appears around the knob. This frame indicates that the knob is selected for operation using the multifunction encoders.

While you are using the multifunction encoders to operate a knob, the line indicating the setting of the knob will become longer and the line around the circumference will become thinner; this clearly identifies the knob that you are operating. Also, a frame will appear around the numerical value.

Knobs for which a double frame is displayed indicate PAN/BALANCE.

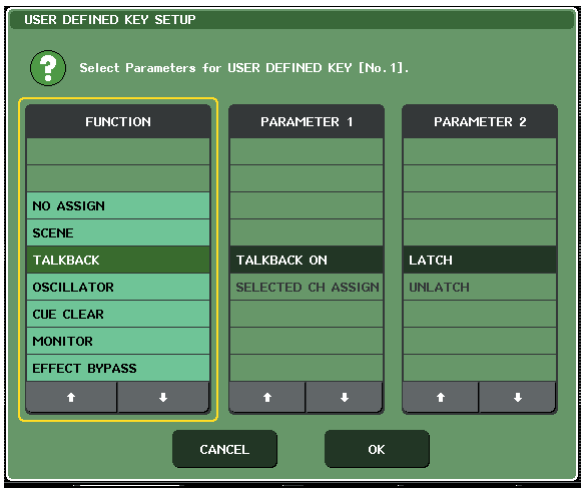



HINT

- *For some knobs, pressing them again when they are enclosed by a heavy frame will open a window where you can make additional detailed settings.*

## List windows

The following type of window will appear when you need to select items from a list, such as a list of user-defined keys.




Within the list, the highlighted item always shown in the center is the item selected for operations. Press the ↑/↓ located below the list to scroll the list upward or downward.

HINT

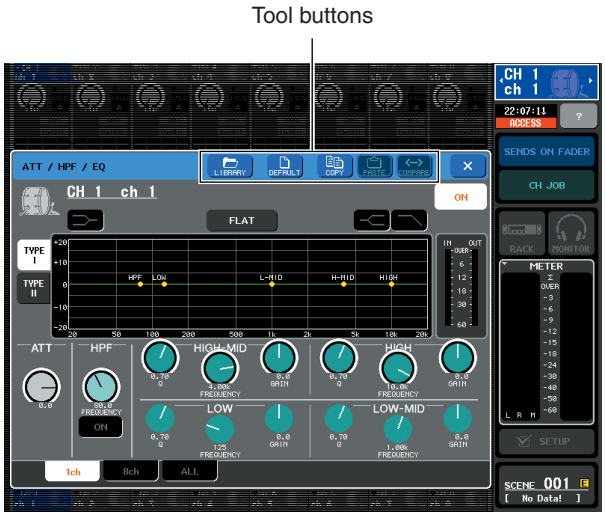
- *You can also scroll up/down using the multifunction encoder.*
- *If there is more than one list in the screen, your operations will apply to the list enclosed in a yellow frame. You can press the multifunction encoder to move the focus of your operations to the next column.*

## Keyboard window

The following keyboard window will appear when you need to assign a name or comment to a scene or library, or when you need to assign a channel name. Press characters in the window to enter the desired characters (for the procedure see → p. 34).

## Popup windows

When you press a button or field for a specific parameter in a screen, a window showing detailed parameters or lists will appear. This type of window is called a “popup window.”




There are three types of popup window, “1 ch” windows that show only a specific channel, “8 ch” windows that show the currently selected group of eight channels, and “ALL” windows that show all channels in a single view. You can switch between these using tabs.
Some popup windows show several buttons called “tool buttons” at the top of the window. You can use these tool buttons to recall libraries or to perform copy/paste operations.
Press the “X” symbol to close the popup window and return to the previous screen.

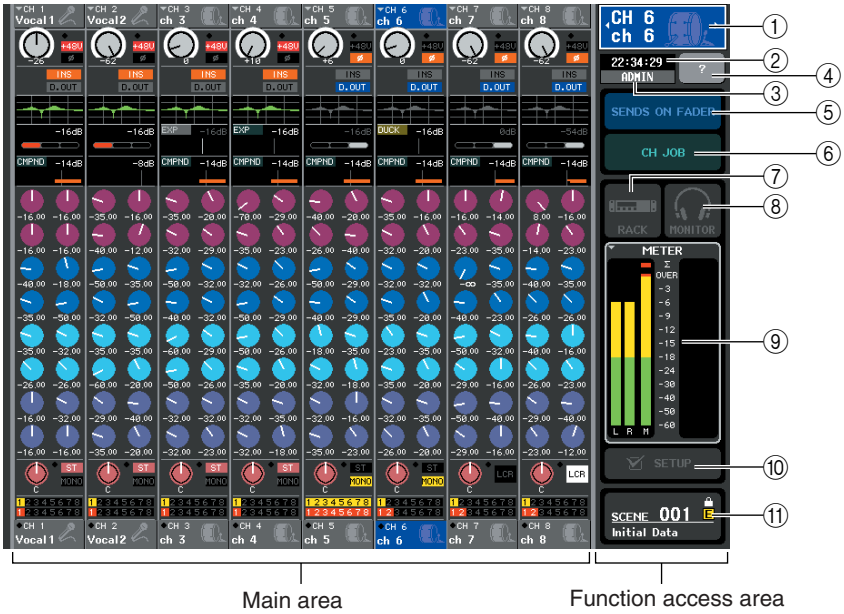
## Dialog boxes

A dialog box like the following will appear when you need to confirm the operation you just performed.

Press the OK button to execute the operation. The operation will be cancelled if you press the CANCEL button.

# Viewing the touch screen

The M7CL’s touch screen shows the following information, and is broadly divided into two areas.




## Function access area

### ① Selected channel

This shows the number, name and icon of the channel that is currently selected for operation. (For details on assigning a name → p. 34, on selecting an icon → p. 59). You can also press this field to switch channels. Pressing the left half will select the preceding channel, and pressing the right half will select the next channel.

### ② Time

This indicates the current time. (For details on how to set the time → p. 235).

### ③ User name

This indicates the name of the user who is currently logged in (i.e., is authenticated and able to operate the system).

If the oscillator or talkback is enabled, this area will indicate "OSC" or "TB" respectively. If cue monitor is on, the type of signal being cue-monitored (IN/OUT/DCA/KEY IN/EFFECT) is shown. An indication of "ACCESS" is shown while a USB storage device attached to the USB connector is being accessed.

NOTE

- *Do not disconnect the USB connector while the "ACCESS" indication is shown here. Doing so may damage the data on the USB storage device.*

### ④ Help

This button is used to show on-line help in the main area. To view the on-line help, first you must load the help file from the USB storage device (→ p. 225).

### ⑤ SENDS ON FADER

Press this button to switch to SENDS ON FADER mode, where you can use the faders of the top panel to adjust the MIX/MATRIX send level (→ p. 70). During this time, the function access area of the touch screen will change to a screen allowing you to select the send-destination MIX/MATRIX bus.

### ⑥ CH JOB (Channel Job)

Press this button to switch to CH JOB mode, where you can make settings for channel grouping and linking (→ p. 123). During this time, the function access area of the touch screen will change to a screen allowing you to select the function you want to operate.

### ⑦ RACK

When you press this button, the VIRTUAL RACK screen will appear in the main area, allowing you to edit the GEQ or effect settings (→ p. 172).

### ⑧ MONITOR

When you press this button, the MONITOR screen will appear in the main area, allowing you to edit the monitor or oscillator settings (→ p. 154).

### ⑨ METERS

These are level meters that monitor the level of the STEREO bus (L/R), MONO bus (M), and cue signal (CUE). When you press this field, the METER screen will appear in the main area, displaying the meters and fader status for all channels at once (→ p. 167). If you press this field when the cue monitor is on, the cue monitor will be canceled (equivalent to CUE CLEAR).

### ⑩ SETUP

When you press this button, the SYSTEM screen will appear in the main area, allowing you to make basic system settings and user-specific settings (→ p. 229).

### ⑪ SCENE

This indicates the number and name of the scene that was last stored or recalled. An "R" symbol is displayed for read-only scenes, and a lock icon is displayed for write-protected scenes. If you edit the parameters from their last stored or recalled state, an "E" symbol will appear in the lower right.
When you press this field, the SCENE LIST screen will appear in the main area, allowing you to store or recall scenes (→ p. 135).

When you press a button ⑦ through ⑪ to access the corresponding screen, the button will be highlighted. In this state, pressing the button once again will return either to the most recently recalled SELECTED CHANNEL VIEW screen or the OVERVIEW screen.

## Main area

The contents of the main area will change depending on the function that is currently selected. Mixing operations will involve mainly the following two types of screen.

### ■ SELECTED CHANNEL VIEW screen

This screen shows all the mix parameters for the currently selected channel. To access this screen, click one of the encoders of the SELECTED CHANNEL section.

### ■ OVERVIEW screen

This screen simultaneously shows the main parameters for the (up to) eight channels currently assigned to the Centralogic section. To access this screen, press one of the keys in the NAVIGATION KEYS section or one of the multi-function encoders.

HINT

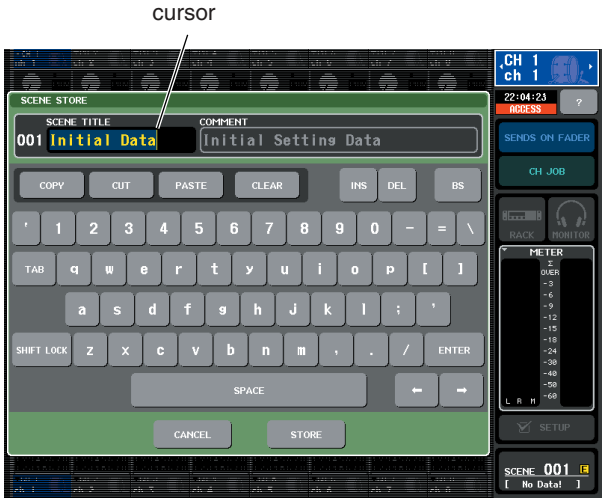
- *While the HELP, METER or SCENE screen is displayed in the main area, the OVERVIEW screen will not open even if you press a key in the NAVIGATION KEYS section. To return to the OVERVIEW screen, press a user-defined key to which the OVERVIEW function is assigned. Alternatively, press the HELP, METER or SCENE field once again.*

# Entering names

On the M7CL you can assign a name to each input channel, output channel, and DCA group, and assign a title to scene and library data when saving it.
To assign a name, you will use the keyboard window shown in the screen.

## 1 Access the screen for assigning a name.

The illustration shown below is an example of the SCENE STORE window used to enter a scene title or comment.




The box that shows the characters you've entered will display a vertical line called the "cursor," which indicates the current position.

## 2 Use the keyboard window in the touch screen to enter the desired characters.

When you press a character in the keyboard window, the corresponding character will be entered in the box, and the cursor will move to the right.

## 3 Input the subsequent characters in the same way.

When inputting characters, you can use the following buttons in the keyboard window.

- **COPY button**
  Copies the string of characters that are selected (highlighted) in the text box.
- **CUT button**
  Deletes and copies the string of characters that are selected (highlighted) in the text box.
- **PASTE button**
  Inserts the string of characters copied by COPY or CUT at the cursor location (or overwrites the currently selected range of characters).
- **CLEAR button**
  Deletes all characters that have been input in the text input box.
- **INS button**
  Inserts a space (blank) at the cursor position.
- **DEL button**
  Deletes the character at the right of the cursor (or the string of characters selected in the text box).
- **BS button**
  Deletes the character at the left of the cursor (or the string of characters selected in the text box).
- **TAB button**
  This button accesses the next selectable item. For example in the SCENE STORE window you can use this button to switch between two text input boxes, and in the PATCH/NAME window you can use this to switch channels.
- **SHIFT LOCK button**
  Switches between uppercase and lowercase alphabetical characters. You can enter uppercase characters and symbols while this button is on, and lowercase characters and numerals while this button is off.
- **ENTER button**
  Finalizes the name you entered. In the SCENE STORE window, this has the same effect as pressing the STORE button.

## 4 When you've entered the name, press the STORE button or the ENTER button.

The name you entered will be applied.

HINT

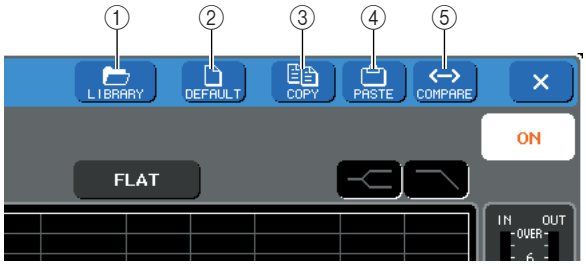
- *This basic procedure also applies in screens where you enter names for channels or other library items. When you enter a name for a channel, your input will be reflected immediately without your having to press the ENTER button.*
- *By pressing inside the text entry box, you can move the input position to the location you pressed. If you select a region of characters you've entered in the box and then enter a new character, the newly entered character will overwrite the selected region.*

# Using the tool buttons

In some popup windows, the title bar at the top of the window contains tool buttons for additional functions. You can use these buttons to access related libraries or copy parameters from one channel to another channel. This section explains how to use the tool buttons.

## About the tool buttons

In the ATT/HPF/EQ, DYNAMICS 1/2, GEQ, and EFFECT popup windows, the following tool buttons are shown.




### ① LIBRARY button

This button opens the library associated with the current popup window (EQ, dynamics, GEQ, or effect libraries).

### ② DEFAULT button

This button returns the currently selected channel (EQ/dynamics) or rack (effect) to its default state.

### ③ COPY button

This button copies the settings of the currently selected channel (EQ/dynamics) or rack (GEQ/effect). The copied content is held in a buffer memory (a temporary memory area).

### ④ PASTE button

This button pastes the settings from the buffer memory to the currently selected channel (EQ/dynamics) or rack (GEQ/effect).

### ⑤ COMPARE button

This button exchanges and compares the settings in the buffer memory with the settings of the currently selected channel (EQ/dynamics) or rack (GEQ/effect).

For some windows, the following tool buttons are also shown.

- **SET ALL**.....Sets all parameters in the window.
- **CLEAR ALL**....Clears all parameters in the window.
- **ALL PRE**.....Specifies PRE as the position from which all signals are sent to the specified bus.
- **ALL POST**.....Specifies POST as the position from which all signals are sent to the specified bus.

## Using libraries

This section explains basic operations for libraries. Libraries allow you to store and recall settings for the currently selected channel (EQ/dynamics) or rack (GEQ/effect).

The following libraries are provided.

- **Input channel library**
- **Output channel library**
- **Input EQ library**
- **Output EQ library**
- **Dynamics library**
- **GEQ library**
- **Effect library**

The method of operation is essentially the same for each library.

### ● Recalling settings from a library

**1 Open a popup window that provides the tool buttons.**

To access each popup window, proceed as follows.

To recall settings from a channel library, first display the SELECTED CHANNEL VIEW screen. Then, proceed to Step 3.

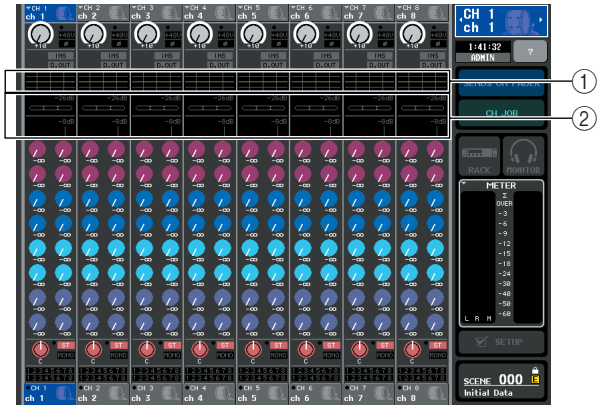
**[SELECTED CHANNEL VIEW screen]**

Press an encoder in the SELECTED CHANNEL section to access the SELECTED CHANNEL VIEW screen.

### [ATT/HPF/EQ popup window]
### [DYNAMICS 1/2 popup window]

In the SELECTED CHANNEL VIEW screen or the OVERVIEW screen, press the appropriate field for EQ or Dynamics 1/2.

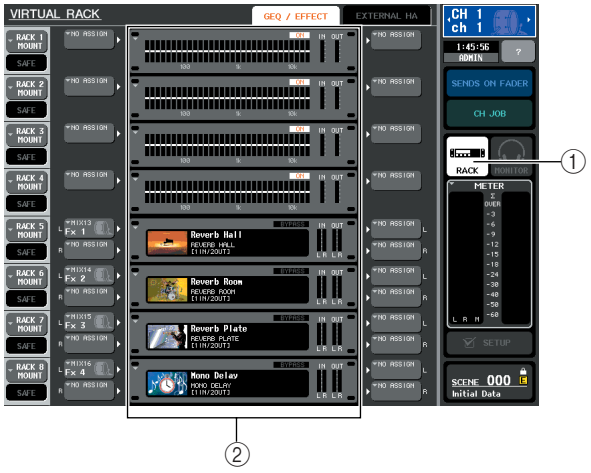
① **EQ field**
② **Dynamics 1/2 field**




① **EQ field**
② **Dynamics 1/2 field**

### [GEQ/EFFECT popup window]

In the VIRTUAL RACK window that appears when you press the RACK button in the function access area, press a rack in which a GEQ/effect is already mounted.




① **RACK button**
② **Racks**

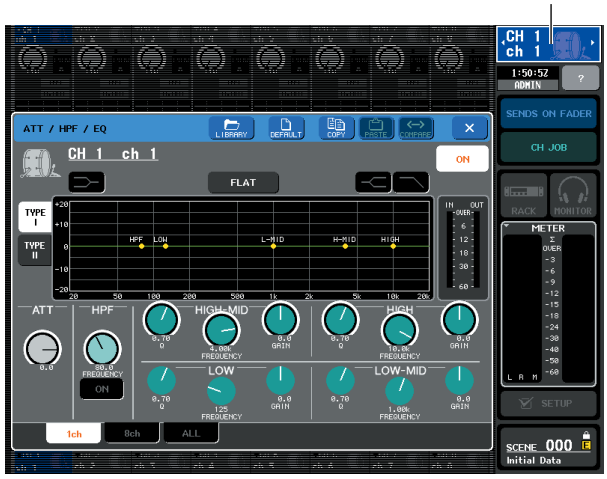
## 2 Select the channel (EQ/dynamics) or rack (GEQ/effect) for which you want to recall settings.

The method of selecting a channel or rack will depend on the type of popup window that is displayed.

### [ATT/HPF/EQ popup window (1 ch)]
### [DYNAMICS 1/2 popup window (1 ch)]

Use the panel [SEL] keys or the channel select button in the function access area to select a channel.

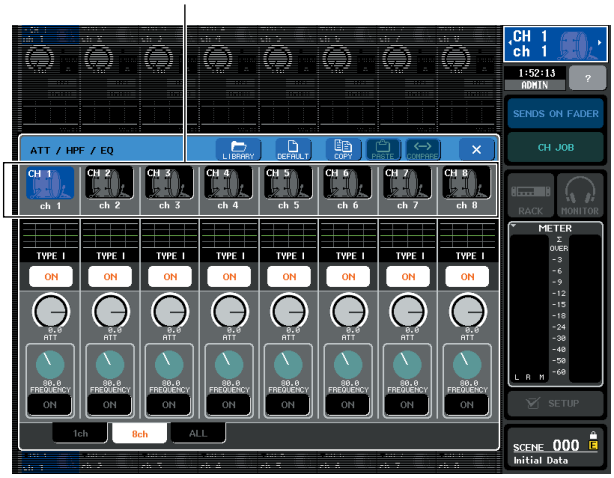
Channel select button



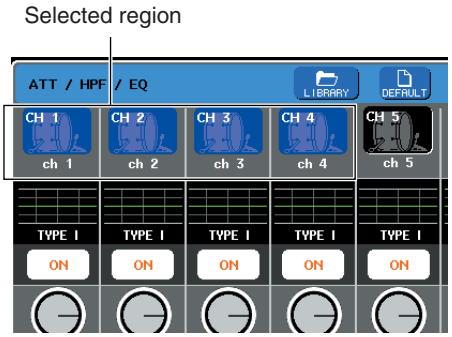
### [ATT/HPF/EQ popup window (8 ch/ALL)]
### [DYNAMICS 1/2 popup window (8 ch/ALL)]

In addition to using the panel [SEL] keys or the channel select button in the function access area, you can also select a channel by pressing the channel number / channel name buttons in the popup window.

Channel number / Channel name buttons



If you use the channel number / channel name buttons in the 8 ch/ALL popup window, you can select multiple channels by selecting a region. In this case, the same library data will be recalled to all of the selected channels.




### [GEQ/EFFECT popup window]

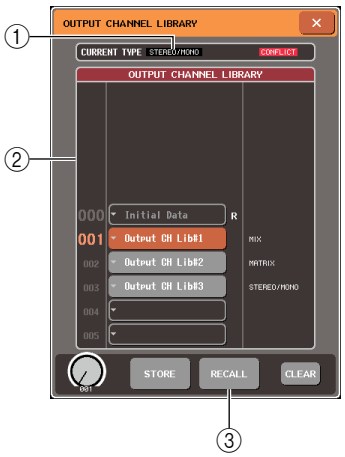
Use the rack select tabs at the bottom of the popup window to select a rack.

NOTE

- *You can't select a rack select tab of a rack in which no GEQ or effect is mounted.*

## 3 Press the LIBRARY tool button to open the corresponding library window.

Library windows contain the following items.




### ① CURRENT TYPE (only for the output channel library)

This field displays the type of channel selected via the [SEL] key.

### ② List

This shows the data saved in the library. A highlighted line indicates that it is selected for operations. Read-only data is indicated by an R symbol.

HINT

- *The right side of the list displays information regarding the relevant setting data (such as the type of output channels, dynamics type or effect type being used). About the corresponding data. The dynamics library also displays symbols indicating whether the data can be recalled into Dynamic 1 and/or Dynamics 2.*

### ③ RECALL button

This recalls the data selected in the list into the currently selected channel (EQ/dynamics) or rack (GEQ/effect).

## 4 By turning any one of the multifunction encoders, move the highlighted line in the list to select the library item you want to recall.

Depending on the data you've selected for recall, it may not be possible to recall it into the currently selected channel or rack. Each library has the following restrictions.

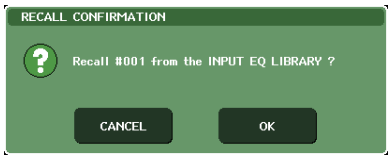
- **Channel library**
  If the type of channel selected via the [SEL] key is different from the one selected in the list in the output channel library, "CONFLICT" appears to the right of CURRENT TYPE. You can recall the data even if "CONFLICT" appears, although the data would include different parameters. Parameters that do not exist in the library will be set to the default value.
- **Dynamics library**
  The dynamics library contains three types of data; Dynamics 1 and Dynamics 2 for input channels, and Dynamics 1 for output channels. You can't recall the data if an inappropriate type of dynamics data is selected in the library.
- **GEQ library**
  The GEQ library contains two types of data; 31BandGEQ or Flex15GEQ. You can't recall the data if the type selected in the library is different than the type of the recall-destination GEQ.
- **Effect library**
  Effect library items that use effect types "HQ.Pitch" and "Freeze" can be recalled only to rack 5 or 7. These cannot be recalled if any other rack is selected.

If you select a library number that cannot be recalled, it will not be possible to press the RECALL button.

### 5 Press the RECALL button.

HINT

- *You can make settings so that a dialog box will ask you to confirm the Recall operation. For details on this setting, refer to p. 214.*




### 6 The selected data will immediately be loaded into the channel (EQ/dynamics) or rack (GEQ/effect) you selected in step 2.

NOTE

- *If you recall channel library data to a channel that is linked to another channel, the link setting of the channel to which data was recalled will be canceled.*

## ● Storing settings in a library

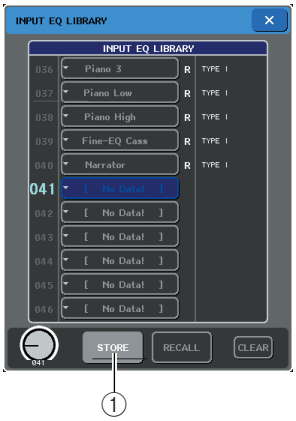
### 1 Open a popup window that provides the tool buttons.

### 2 Select the channel (EQ/dynamics) or rack (GEQ/effect) whose settings you want to store.

NOTE

- *You can select only one channel or rack as the source for storing. If multiple channels are selected in the dynamics/EQ popup window (8 ch or ALL), you won't be able to perform the Store operation.*

### 3 In the upper part of the popup window, press the LIBRARY button to access the library.




① **STORE button**
The settings of the currently selected channel (EQ/dynamics) or rack (GEQ/effect) will be stored to the position selected in the list.

### 4 Turn one of the multifunction encoders to select the store-destination library number.

NOTE

- *You can't store to a library number that contains read-only data (indicated by an R symbol).*

### 5 When you've selected the store-destination, press the STORE button.

The LIBRARY STORE popup window will appear, allowing you to assign a title to the settings. For details on entering text, refer to "Entering names" (→ p. 34).

### 6 When you've assigned a title to the settings, press the STORE button in the LIBRARY store popup window.

A dialog box will ask you to confirm the Store operation.

### 7 To execute the Store operation, press the OK button.

The current settings will be stored to the library number you selected in step 4. If you decide to cancel the Store operation, press the CANCEL button instead of the OK button.

HINT

- *Even after you've stored the settings, you can edit the title of the settings by pressing the data title in the list to access the LIBRARY TITLE EDIT popup window. However, you can't edit the title of a read-only library item (indicated by an R symbol).*

NOTE

- *Be aware that if you store settings to a location that already contains data, the existing data will be overwritten. (Read-only data cannot be overwritten.)*

### ● Erasing settings from a library

**1 Open a popup window that provides the tool buttons.**

**2 In the upper part of the popup window, press the LIBRARY button to access the library.**

INPUT EQ LIBRARY
INPUT EQ LIBRARY
036 Piano 3 R TYPE I
037 Piano Low R TYPE I
038 Piano High R TYPE I
039 Fine-EQ Cass R TYPE I
040 Narrator R TYPE I
041 Setting 1 TYPE I
042 Setting 2 TYPE I
043 Setting 3 TYPE I
044 Setting 4 TYPE I
045 [ No Data! ]
046 [ No Data! ]
STORE
RECALL
CLEAR
①

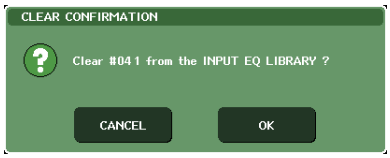
① **CLEAR button**
This clears (erases) the settings that are selected in the list.

**3 Turn one of the multifunction encoders to select the library item that you want to clear.**

HINT

*• You cannot clear read-only data (indicated by an R symbol).*

**4 Press the CLEAR button.**
A dialog box will ask you to confirm the Clear operation.




**5 To execute the Clear operation, press the OK button.**
The data you selected in step 3 will be cleared. If you decide to cancel the Clear operation, press the CANCEL button instead of the OK button.

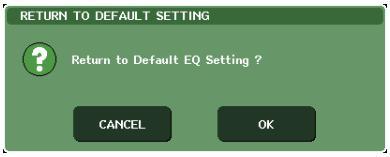
## Initializing settings

Heres how you can return the EQ/dynamics settings of the currently selected channel or the effect settings of a rack to their default state. A GEQ can be initialized by the FLAT button in the screen.

**1 Open a popup window that provides the tool buttons.**

**2 Select the channel (EQ/dynamics) or rack (effect) whose settings you want to initialize.**

**3 Press the DEFAULT button.**
A dialog box will ask you to confirm the initialization operation.




**4 To execute the initialization, press the OK button.**
The EQ/dynamics of the channel or the effect settings of the rack you selected in step 2 will be initialized. If you decide to cancel the initialization, press the CANCEL button instead of the OK button.

HINT

*• In the case of EQ/dynamics, you can use the channel number / channel name buttons in the 8 ch/ALL popup window to select a range of channels and initialize them in a single operation.*

## Copying/pasting settings

Here's how the EQ/dynamics settings of the currently selected channel or the GEQ/effect settings of a rack can be copied to a buffer memory and pasted to another channel or rack.

Copy/paste operations are restricted to the following combinations.

- Between input channel EQ settings
- Between output channel EQ settings
- Between dynamics processors for which the paste-destionation has the same type (GATE, DUCKING, COMPRESSOR, EXPANDER, COMPANDER-H, COMPANDER-S, or DE-ESSER) as the copy-source
- Between effects/GEQ mounted in a rack

HINT

*• Only 31BandGEQ settings that use less than fifteen bands can be copied to a Flex15GEQ.*

### 1 Open a popup window that provides the tool buttons.

### 2 Select the channel (EQ/dynamics) or rack (GEQ/effect) whose settings you want to copy.

### 3 Press the COPY button.

The current settings will be saved in the buffer memory.

NOTE

*• Be aware that if you copy other settings before you paste, the buffer memory will be overwritten.*

*• You can select only one channel or rack as the copy-source. If multiple channels are selected in the 8 ch/ALL popup window, you won't be able to press the COPY button.*

### 4 Select the paste-destination channel or rack.

HINT

*• If you're pasting EQ/dynamics settings, you can use the 8 ch/ALL popup window to select multiple channels as the paste-destination. In this case, the same content will be pasted to all selected channels.*

### 5 Press the PASTE button.

The settings of the channel (EQ/dynamics) or the rack (GEQ/effect) you selected in step 2 will be pasted.

NOTE

*• Be aware that when you paste, the settings will overwrite the paste-destination.*

*• If nothing has been stored in the buffer memory, the PASTE button cannot be pressed.*

*• Of the two types of GEQ, using the tool buttons in a rack where a Flex15GEQ is selected will cause the settings to be copied/pasted individually.*

*• Effect settings with an effect type of "HQ.Pitch" or "Freeze" cannot be pasted to rack 6 or 8.*

## Comparing two settings

You can use the COMPARE button to exchange the settings held in the buffer memory with the settings of the currently selected channel (EQ/dynamics) or rack (GEQ/effect). This is convenient when you want to temporarily keep the settings at a certain point, and compare them later with the subsequently edited settings.

### 1 Open a popup window that provides the tool buttons.

### 2 Select a channel (EQ/dynamics) or rack (GEQ/effect).

### 3 Press the COPY button to place the current settings in the buffer memory.

This will be the first set of settings.

NOTE

*• Be aware that if you copy other settings before you compare, the buffer memory will be overwritten.*

### 4 Edit the settings of the currently selected channel (EQ/dynamics) or rack (GEQ/effect).

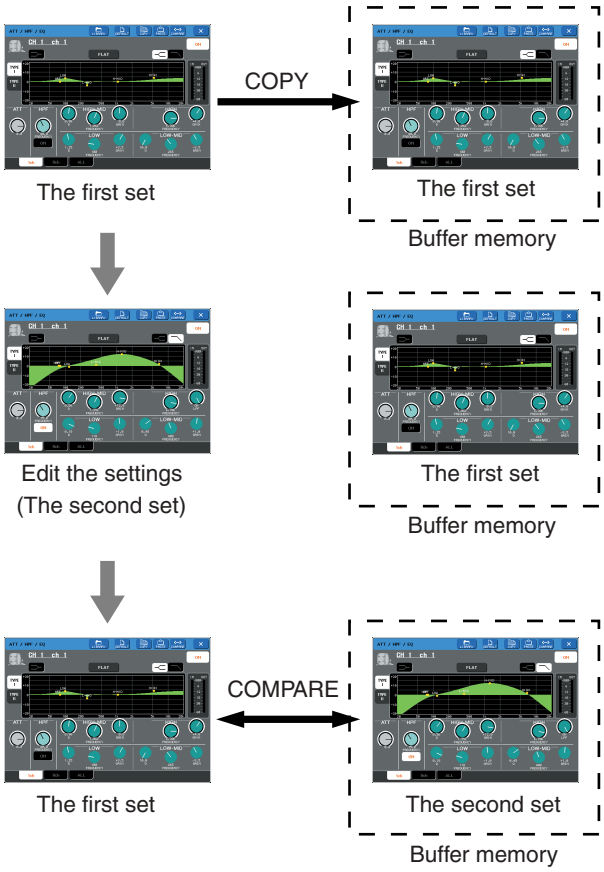
This will be the second set of settings.

HINT

*• After you've stored the first set of settings in the buffer memory, you can initialize the channel or rack and edit the second set of settings from an initialized state if desired.*

**5 To compare the first set of settings with the current settings (the second set), press the COMPARE button.**

You will return to the first set of settings. At this time, the second set of settings will be held in the buffer memory.




**6 You can press the COMPARE button repeatedly to compare the first and second sets of settings.**

Each time you press the COMPARE button, the current settings will be exchanged with the settings held in the buffer memory.

Unlike the Paste operation, the Compare operation always lets you return to the previous settings as long as the buffer memory has not been overwritten.

HINT

- *The settings in the buffer memory can also be used for the Paste operation.*

NOTE

- *Of the two types of GEQ, using the tool buttons in a rack where a Flex15GEQ is selected will cause the settings to be exchanged individually with the buffer memory.*

# ◆ Chapter 4 ◆
# Connections and setup

This chapter explains how to connect SB168-ES units to the M7CL, make audio input and output connections, and perform the setup operation required when you start the M7CL for the first time.



## Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function

This section describes how to connect the SB168-ES units to the M7CL-48ES and set up the system using the STAGE BOX SETUP function. You can use either a daisy chain connection or ring connection.

### ● Daisy chain characteristics

- Three daisy-chained SB168-ES units provide a total of 48 input channels and 24 output channels.
- If a connection is broken in a daisy chain network, the signal flow is interrupted at that point and no signal will be transferred beyond that point.

### ● Ring connection characteristics

- The EtherSound specifications limit the total number of input and output channels to 64 in this type of network. Three daisy-chained SB168-ES units provide a total of 48 input channels and 16 output channels.
- A problem in the network, such as a disconnected cable, will not affect operation of the entire network.

For detailed information on EtherSound, refer to the EtherSound website:

**http://www.ethersound.com/**

And “EtherSound Setup Guide” on the M7CL product page at the Yamaha pro audio website:

**http://www.yamahaproaudio.com/products/**

When the unit is shipped from the factory, the AUTO CONFIGURE button is set to ON, the connection setting is configured for DAISY CHAIN, and the word clock master is set to INT 48kHz.

To configure the unit for a ring connection, use the Stage Box Setup function. p. 45

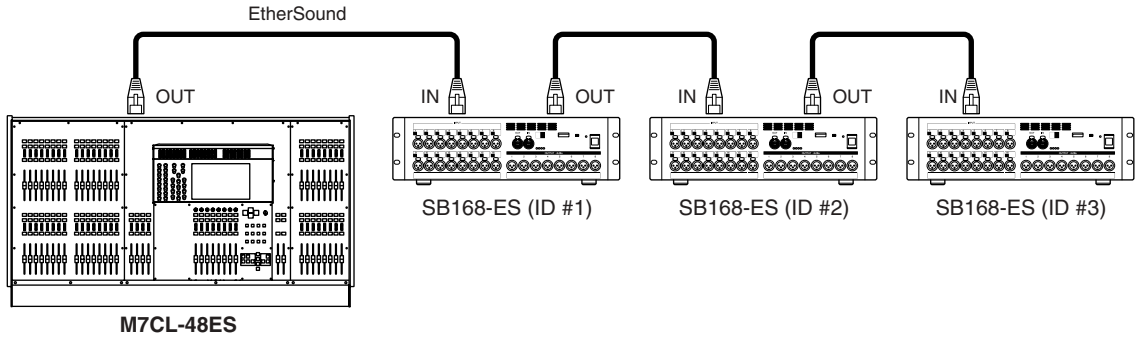
The explanation in this section assumes that the unit is set to factory default settings. If you are not sure whether the unit is currently set to the factory defaults, we recommend that you initialize the internal memory of the M7CL-48ES. p. 238

NOTE

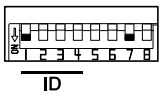
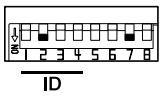
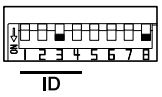
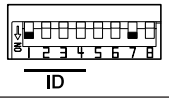
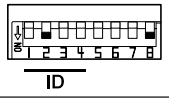
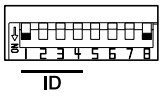
*• If you plan to connect SB168-ES units using the Stage Box Setup function, the firmware of the EtherSound module must be updated to an appropriate version. (→ p. 16)*

## ■ Daisy chain connection

**1 Connect the EtherSound [OUT] connector on the M7CL-48ES to the [IN] connector of the first SB168-ES unit, and daisy chain subsequent units as shown in the diagram.**




**2 Set the dip switches on the SB168-ES units as shown in the table below.**

| Number of SB168-ES units | ID #1 | ID #2 | ID #3 |
|---|---|---|---|
| Three | 1&7  | 2&7  | 3&8  |
| Two | 1&7  | 2&8  | — |
| One | 1&8  | — | — |

**3 Turn on the power to the M7CL-48ES and the SB168-ES units. If M7CL-48ES's scene #000 is not selected, recall scene #000. p. 138**

After the steps above are completed, patches are assigned as follows:

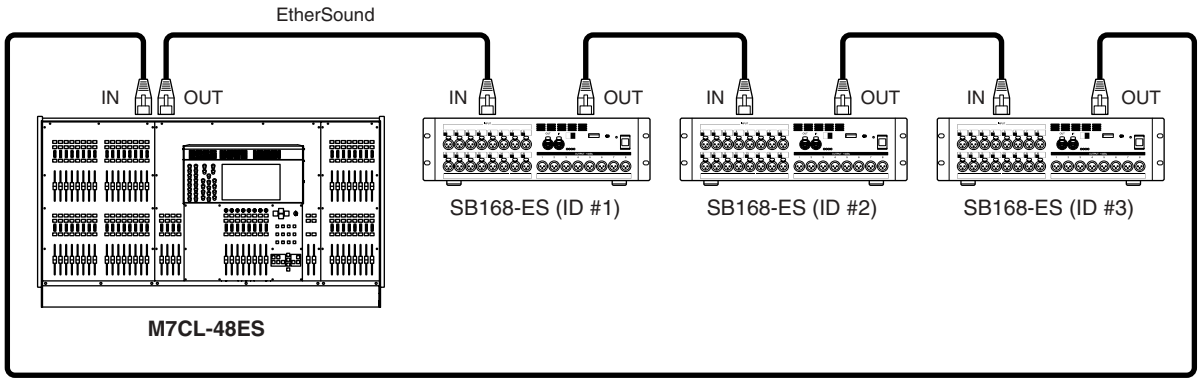
| SB168-ES | | EtherSound patches set via the Auto Configure | M7CL-48ES patches set via scene 000 |
|---|---|---|---|
| ID #1 | INPUT 1–16 jacks | ES IN 1–16 | CH 1–16 |
| | OUTPUT 1–6 jacks | ES OUT 1–6 | MIX 1–6 |
| | OUTPUT 7/8 jacks | ES OUT 7/8 | STEREO L/R |
| ID #2 | INPUT 1–16 jacks | ES IN 17–32 | CH 17–32 |
| | OUTPUT 1–6 jacks | ES OUT 9–14 | MIX 7–12 |
| | OUTPUT 7/8 jacks | ES OUT 15/16 | STEREO L/R |
| ID #3 | INPUT 1–16 jacks | ES IN 33–48 | CH 33–48 |
| | OUTPUT 1–6 jacks | ES OUT 17–22 | MATRIX 1–6 |
| | OUTPUT 7/8 jacks | ES OUT 23/24 | STEREO L/R |

NOTE

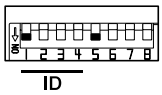
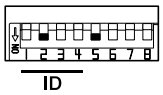
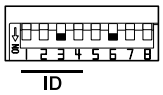
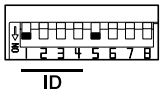
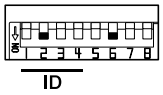
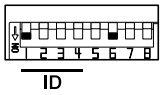
- *To change the input or output channel patches on the M7CL-48ES, access M7CL-48ES's PATCH/NAME popup window.*
- *If you want to change the EtherSound patches from AVS-ESMonitor, refer to "Changing the EtherSound settings from AVS-ESMonitor (M7CL-48ES)" (→ p. 243).*
- *The word clock setting cannot be changed if the AUTO CONFIGURE button is turned ON.*
- *For more information on the AUTO CONFIGURE button, please refer to "Connecting SB168-ES units to the M7CL-48ES using the Stage Box Setup function" (→ p. 242).*

## ■ Ring connection

**1 Connect the EtherSound [OUT] connector on the M7CL-48ES to the [IN] connector of the first SB168-ES unit, daisy chain subsequent units, then connect the [OUT] connector of the last SB168-ES unit to the [IN] connector on the M7CL-48ES as shown in the diagram to complete a ring connection.**

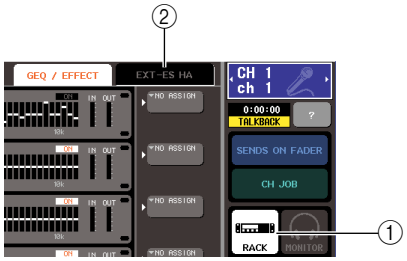



**2 Set the dip switches on the SB168-ES units as shown in the table below.**

| Number of SB168-ES units | ID #1 | ID #2 | ID #3 |
|---|---|---|---|
| Three | 1&5  | 2&5  | 3&6  |
| Two | 1&5  | 2&6  | — |
| One | 1&6  | — | — |

**3 Turn on the power to the M7CL-48ES and the SB168-ES units.**

**4 In the function access area on the right part of the screen, press the RACK button (①) to access the VIRTUAL RACK window.**




**5 Press the EXT-ES HA tab (②) to display the EXT-ES HA field.**

**6 Press the AUTO CONFIGURE button below the EXT-ES HA field.**

The AUTO CONFIGURE button is set to off and its indicator turns off.

**7 Press the RING button to the right of the AUTO CONFIGURE button.**

The connection setting is configured for a ring connection.

**8 Press the AUTO CONFIGURE button.**

A dialog box confirming the change is displayed.

**9 Press the OK button.**

The AUTO CONFIGURE button and its indicator will turn on.

**10 If M7CL-48ES's scene #000 is not selected, recall scene #000. p. 138**

After the steps above are completed, patches are assigned as follows:

| SB168-ES | | EtherSound patches set via the Auto Configure | M7CL-48ES patches set via scene 000 |
|---|---|---|---|
| ID #1 | INPUT 1–16 jacks | ES IN 1–16 | CH 1–16 |
| | OUTPUT 1–6 jacks | ES OUT 1–6 | MIX 1–6 |
| | OUTPUT 7/8 jacks | ES OUT 7/8 | STEREO L/R |
| ID #2 | INPUT 1–16 jacks | ES IN 17–32 | CH 17–32 |
| | OUTPUT 1–6 jacks | ES OUT 9–14 | MIX 7–12 |
| | OUTPUT 7/8 jacks | ES OUT 15/16 | STEREO L/R |
| ID #3 | INPUT 1–16 jacks | ES IN 33–48 | CH 33–48 |
| | OUTPUT 1–6 jacks | ES OUT 9–14 *1 | MIX 7–12 *1 |
| | OUTPUT 7/8 jacks | ES OUT 15/16 *1 | STEREO L/R *1 |

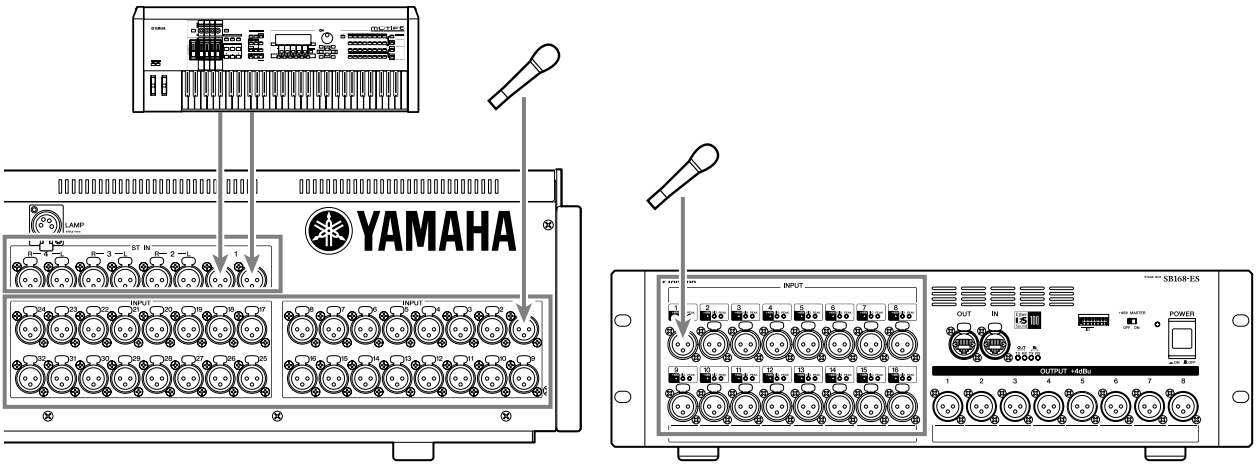
*1: Since the total number of input and output channels is limited to 64 in ring networks, an identical audio signal will be output to SB168-ES units ID#2 and ID#3.

NOTE

- *If you select a ring connection, word clock master will be set to EtherSound (48kHz).*
- *To change the input or output channel patches on the M7CL-48ES, access the M7CL-48ES PATCH/NAME popup window.*
- *If you want to change the EtherSound patches from AVS-ESMonitor, refer to "Changing the EtherSound settings from AVS-ESMonitor (M7CL-48ES)" (→ p. 243).*
- *The word clock setting cannot be changed if the AUTO CONFIGURE button is turned ON.*
- *For more information on the AUTO CONFIGURE button, please refer to "Connecting SB168-ES units to the M7CL-48ES using the Stage Box Setup function" (→ p. 242).*

# Audio input/output connections

## ■ Analog input connections



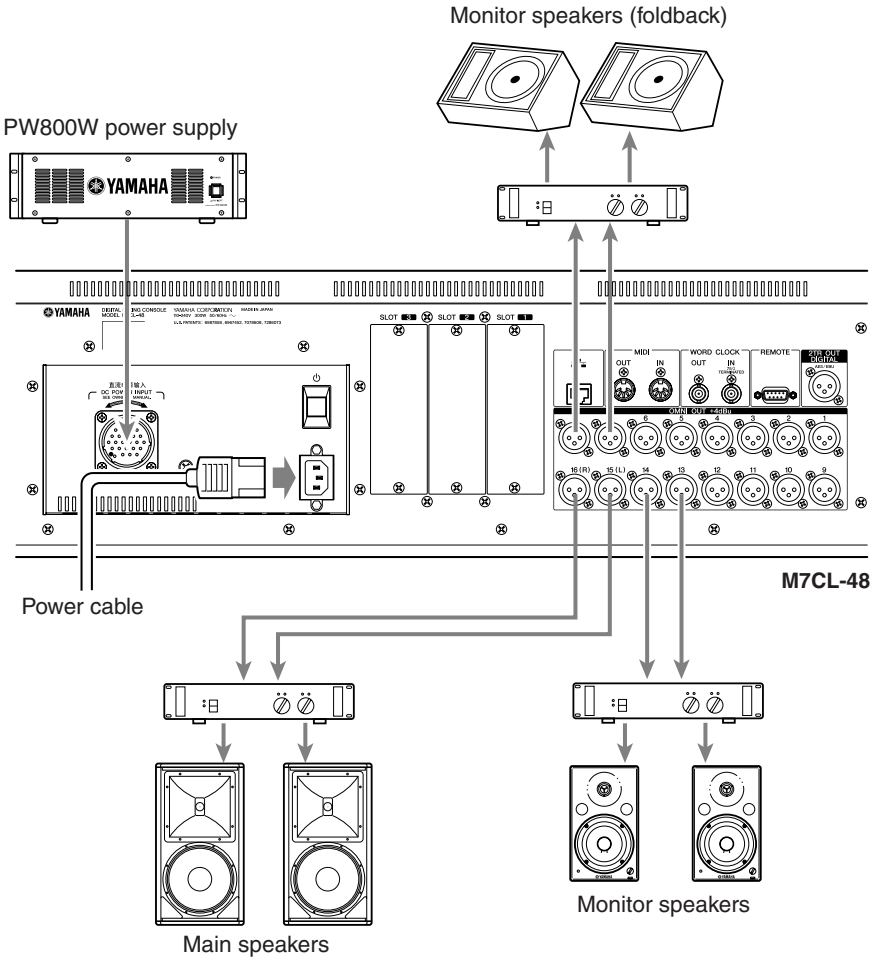

M7CL-48 SB168-ES

The INPUT and OMNI IN jacks are used mainly to connect microphones or monaural line-level devices. The ST IN jacks are used mainly to connect microphones or stereo line-level devices.

NOTE

- *In the default state, the ST IN or OMNI IN jacks are not patched. (Racks 5–8 are assigned to the ST IN channels.) In order to use the signals connected here as inputs, you will need to make patch settings.*

## ■ Analog output connections




To the OMNI OUT jacks on the M7CL and the OUTPUT jacks on the SB-168-ES units, you can patch the output signals from output channels (MIX, MATRIX, STEREO (L/R), MONO (C)), monitor signals (MONITOR OUT L/R/C channel), and the direct out signals of the input channels.
When the M7CL is in the default state, the signals of the following channels are patched to each output port. (You are free to change this patching as desired.)

**• M7CL-32/48**

| | |
|---|---|
| **OMNI OUT jacks 1–12** | MIX channels 1–12 |
| **OMNI OUT jacks 13/14** | MATRIX channels 1/2 |
| **OMNI OUT jacks 15/16** | STEREO channel (L/R) |

**• M7CL-48ES**

| | |
|---|---|
| **OMNI OUT jacks 1–4** | MATRIX channels 1–4 |
| **OMNI OUT jacks 5/6** | MONITOR OUT channel (L/R) |
| **OMNI OUT jacks 7/8** | STEREO channel (L/R) |

NOTE

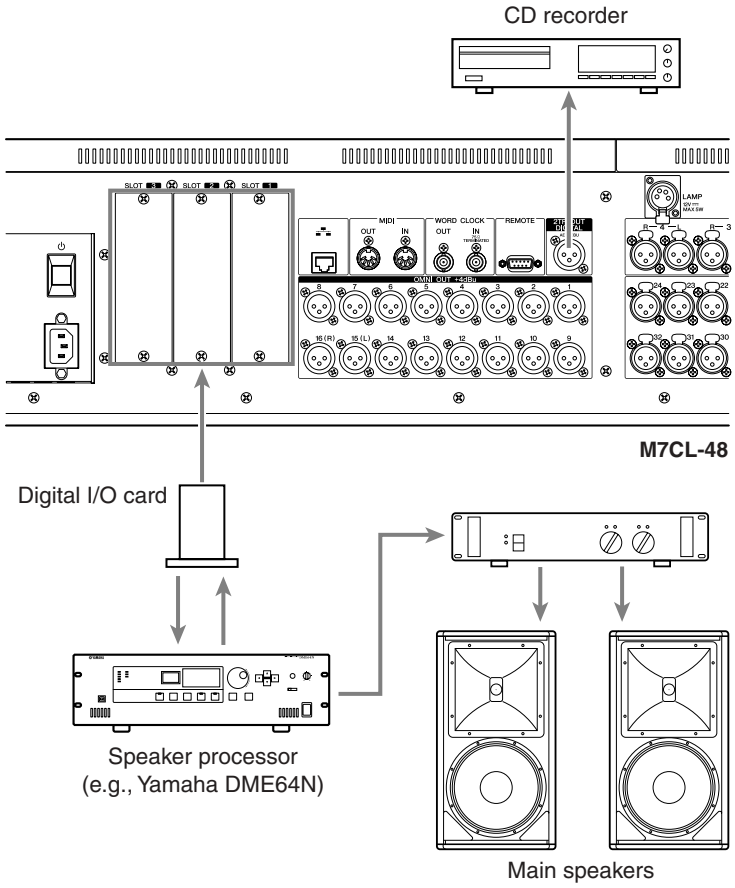
*• For more information on the patches for the OUTPUT jacks on the SB168-ES units connected to the M7CL-48ES, refer to "Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function" (→ p. 43).*

Below the M7CL's front pad there is a PHONES OUT jack for monitoring, and this jack always lets you monitor the signal that is selected as the monitoring source p. 153. By assigning the MONITOR OUT L/R/C channels to the desired output jacks, you can monitor this same signal through external speakers p. 154.

HINT

*• If you connect the power cable to the AC IN jack and also connect the separately sold PW800W power supply, power will continue to be supplied from the PW800W even if the internal power supply shuts down due to a problem.*

## ■ Digital input/output connections




Use the 2TR OUT DIGITAL jack to send the M7CL's internal signals to an external digital audio device. When the M7CL is in the default state, the output signal of the STEREO channel is patched to the 2TR OUT DIGITAL jack, and can be used to record the main mix onto a CD recorder or other device.
By installing separately sold mini-YGDAI I/O cards in slots 1–3, you can add input/output jacks to the M7CL or connect HDR (Hard Disk Recorder) or speaker processor units.

Refer to the Yamaha professional audio website for the most recent information on I/O cards.

**http://www.yamahaproaudio.com/**

NOTE

- *In order to send and receive digital audio signals via the 2TR OUT DIGITAL jack or slots 1–3, the word clock of both devices must be synchronized p. 230.*

## ■ Installing an option card

Before you install I/O cards in slots 1–3, you must check the Yamaha website to determine whether the card is compatible with the M7CL, and to verify the total number of Yamaha or third-party cards that can be installed in combination with that card.

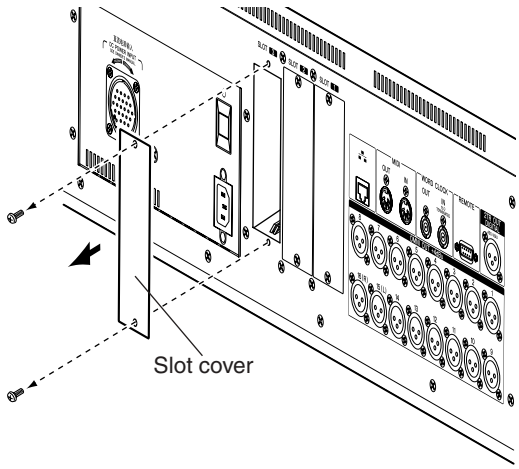
Yamaha website**: http://www.yamahaproaudio.com/**

To install an optional mini-YGDAI card, proceed as follows.

**1 Make sure that the power is turned off.**

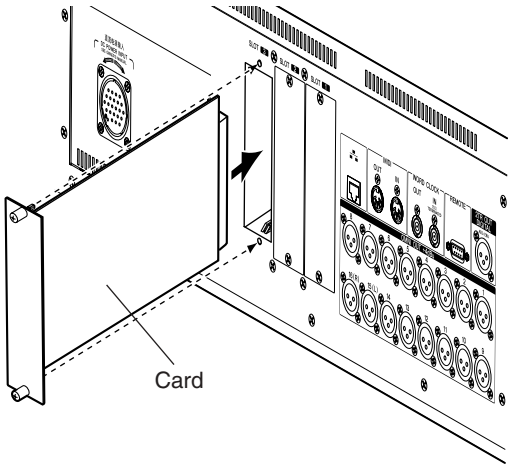
**2 Loosen the screws that hold the slot cover in place, and remove the slot cover.**

Keep the removed slot cover in a safe place.




**3 Align the edges of the card with the guard rails inside the slot, and insert the card into the slot.**

Push the card all the way into the slot so that the connector at the end of the card is correctly inserted into the connector inside the slot.




**4 Use the screws included with the card to fasten the card in place.**

Malfunctions or incorrect operation may occur if the card is not fastened.

***⚠ CAUTION***

- ***Before connecting a separately sold mini-YGDAI I/O card to the M7CL, you must turn off the power switch of the M7CL and the PC800W power supply.***
  ***Failure to observe this will cause malfunctions or electric shock.***

# Setup items required when you start up the M7CL for the first time

This section explains the setup required when starting up the M7CL for the first time. We will also discuss basic operations for sending an input channel signal out from the STEREO bus so that you can check the connections.
If you have connected the SB168-ES units to the M7CL-48ES via the Auto Configure function, setup item “Word clock connections and settings” is now complete. Follow the steps in the “Restoring the current scene to the default state” section, then proceed to setup item “Making HA (Head Amp) gain settings” (→ p. 51).

## Restoring the current scene to the default state

Turn on the power of the M7CL, and recall (load) the default setting scene (scene number 000).

NOTE

- *In the procedure described here, you are asked to recall this default setting scene so that the remaining step in this chapter can be performed appropriately. In actual operation, there is no need to recall the default setting scene each time.*

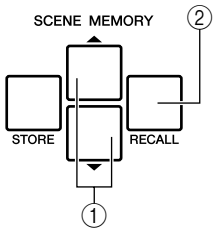
### 1 Turn on the power of the M7CL.

When you turn on the power of the M7CL, you should first power-on the M7CL, and then power-on your power amp and monitor system. (When turning the power off, follow the opposite order.)

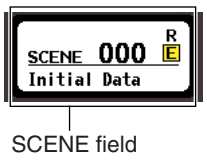
HINT

- *If a PW800W power supply is connected to the M7CL, the power will turn on regardless of whether you first turn on the POWER switch of the M7CL or of the PW800W.*

### 2 Use the top panel SCENE MEMORY [▲]/[▼] keys to make scene number “000” appear in the SCENE field in the function access area of the display.




① **SCENE MEMORY [▲]/[▼] keys**
② **SCENE MEMORY [RECALL] key**




SCENE field

### 3 Press the top panel SCENE MEMORY [RECALL] key.

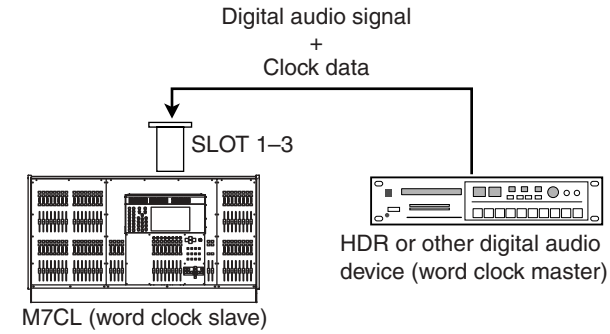
Scene number “000” will be loaded, and the mix parameters and bus settings will return to the default state.

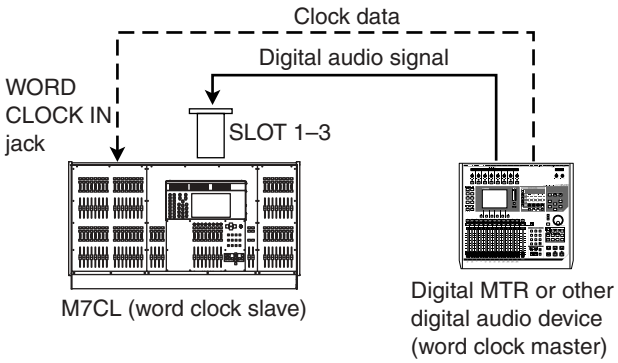
HINT

- *Be aware that when scene number “000” is loaded, the input patch, output patch, internal effect, and HA (Head Amp) settings will also return to their default state.*

## Word clock connections and settings

“Word clock” refers to the clock data that provides the basis of timing for digital audio signal processing.
If you connect external equipment such as a DAW system or HDR (Hard Disk Recorder) to a digital I/O card installed in slot 1–3, this equipment must be synchronized to the same word clock as the M7CL in order for digital audio signals to be transferred between the M7CL and the external equipment. To do so, set one device as the word clock master (transmitting device), and the other devices as the slaves (receiving devices) so that the slaves will synchronize to the word clock master.
There are two ways in which the M7CL can operate as a word clock slave that is synchronized to an externally-supplied word clock; the M7CL can use the clock data included in the digital audio signal being input from a digital I/O card, or it can use a separate word clock signal supplied to the rear panel WORD CLOCK IN jack.





Clock data
Digital audio signal
WORD CLOCK IN jack
SLOT 1–3
M7CL (word clock slave)
Digital MTR or other digital audio device (word clock master)

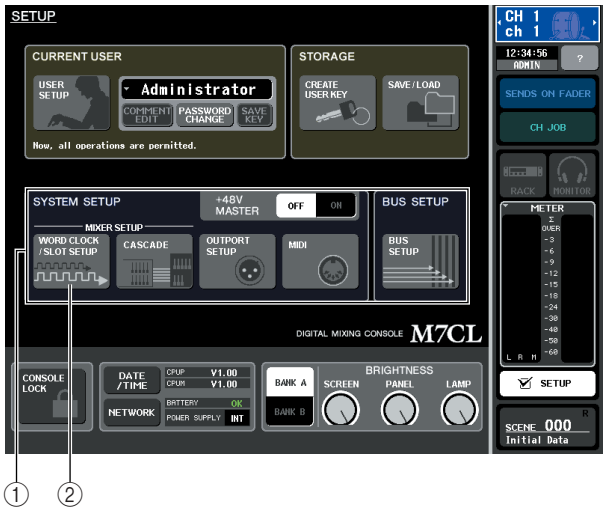
In either case, you must use the following procedure to specify the word clock source that the M7CL will use.

HINT

- *The procedure below is not necessary if you are using the M7CL as the word clock master, if no external devices are digitally connected to the M7CL, or if the Auto Configure function on the M7CL-48ES is turned on.*

### 1 In the function access area, press the SETUP button to access the SETUP screen.

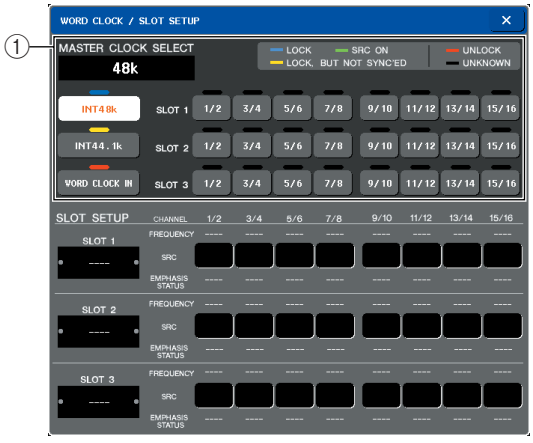
In the SETUP screen you can make settings that apply to the entire M7CL.




① **SYSTEM SETUP field**

② **WORD CLOCK/SLOT SETUP button**

### 2 In the SYSTEM SETUP field at the center of the window, press the WORD CLOCK/SLOT SETUP button to open the WORD CLOCK/SLOT SETUP popup window.




① **WORD CLOCK SELECT field**

NOTE

- *When you switch the word clock source, noise may occur due to loss of synchronization. Be sure to lower the volume of your power amps and monitor system before you continue with the following procedure.*

### 3 In the WORD CLOCK SELECT field, select the clock source.

In the WORD CLOCK SELECT field, use the buttons to select the clock source you want to use as the word clock master.

- **When using clock data from a digital audio signal as the clock source**
  Press a valid two-channel button for the corresponding slot.
- **When using word clock data from the WORD CLOCK IN jack as the clock source**
  Press the WORD CLOCK IN button.

If the M7CL is operating correctly with the selected clock, the symbol immediately above the corresponding button will turn light blue.

HINT

- *The clock data of the digital audio signal supplied via a digital I/O card in slots 1–3 can be selected in two-channel units.*
- *For details on word clock, refer to "Word Clock and Slot settings" (→ p. 230).*

### 4 To close the WORD CLOCK/SLOT SETUP popup window, press the "×" symbol located in the upper right.

You will return to the SETUP screen.

### 5 To close the SETUP screen, press the SETUP button in the function access area.

## Making HA (Head Amp) gain settings

Here's how to adjust the gain of the HA (Head Amp) for each input channel to which a mic or instrument is connected.
On the M7CL, channel parameters can be controlled using either the SELECTED CHANNEL section to make settings for a single channel, or using the Centralogic section to make settings for up to eight channels. Use the method that's appropriate for your situation.

### ● Using the SELECTED CHANNEL section (settings for one channel)

With this method, you select the input channel whose settings you want to adjust, and use the encoders of the SELECTED CHANNEL section to adjust the settings for that channel.

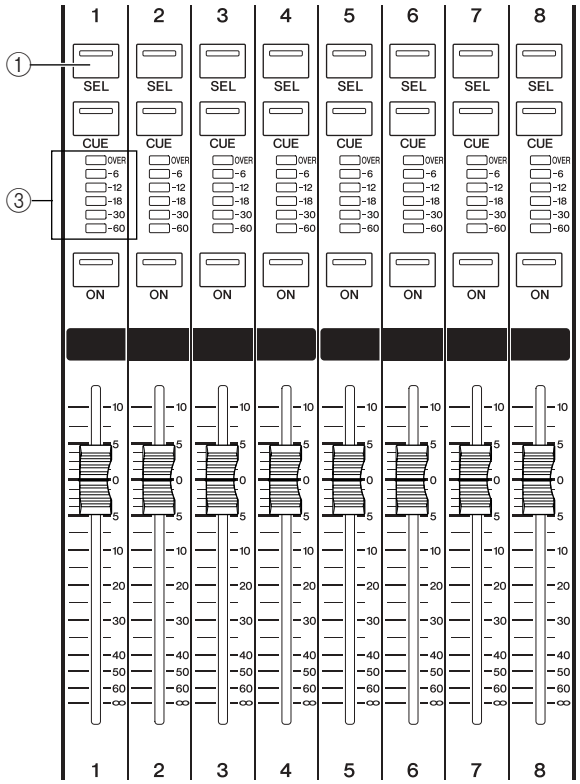
#### 1 Make sure that a mic or instrument is connected to an INPUT jack (→ p. 46).

#### 2 In the top panel INPUT section, press the [SEL] key for the channel corresponding to the INPUT jack you want to control.

In the state immediately after scene 000 is recalled, the input signals from INPUT jacks 1–32 {1–48} are being sent to INPUT channels 1–32 {1–48} respectively, and can be controlled by corresponding channel strip.

For example if you want to make head amp settings for INPUT jack 7, press the [SEL] key of the channel strip for INPUT channel 7.

### [INPUT section channel strip]




① **[SEL] key**

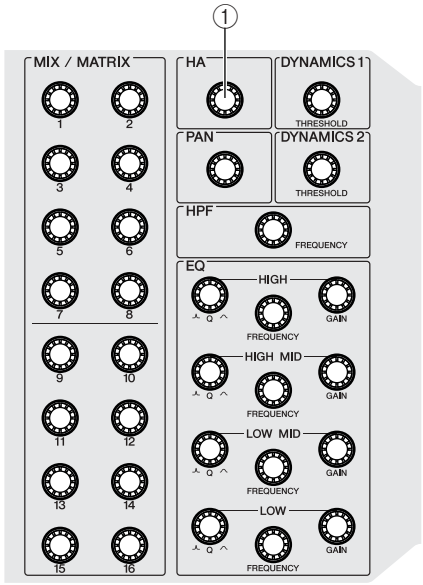
② **Level meter**

When you press the [SEL] key, the key LED will light. The lit LED indicates that this channel is selected for operations. The level meter of that channel strip will indicate the input level for that channel.

## 3 In the SELECTED CHANNEL section located at the left of the touch screen, press any of the encoders.

When you press one of the encoders in the SELECTED CHANNEL section, the SELECTED CHANNEL VIEW screen will appear in the touch screen.

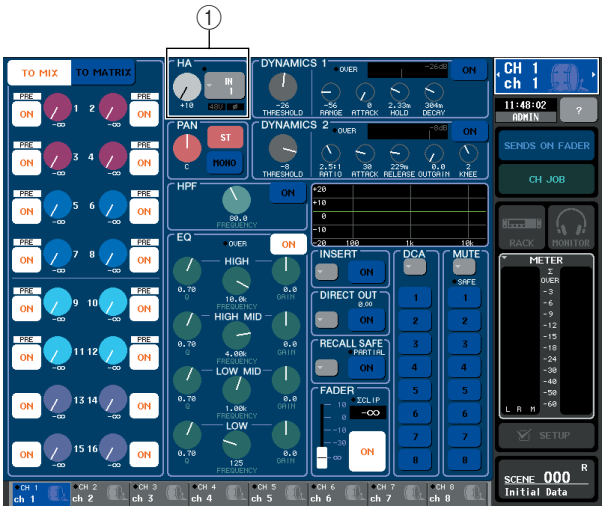
### [SELECTED CHANNEL section]




① **[HA] encoder**

The SELECTED CHANNEL section provides focused control of the currently selected channel (i.e., the channel whose [SEL] key is lit).

### [SELECTED CHANNEL VIEW screen]




① **HA field**

The SELECTED CHANNEL VIEW screen shows most of the parameters of the channel currently selected by its [SEL] key.

HINT

- *In actuality, you can use the encoders of the SELECTED CHANNEL section to operate the channel selected by its [SEL] key even without displaying the SELECTED CHANNEL VIEW screen. (In this case, a popup window will appear to show the value of the parameter you're operating.)*

**4 While playing a musical instrument or speaking or singing into a microphone, turn the [HA] encoder in the SELECTED CHANNEL section to adjust the gain of the currently selected channel.**

Adjust the gain level as high as possible without allowing the OVER segment of the channel strip level meter to light at the highest audio input level.

When you turn the [HA] encoder in the SELECTED CHANNEL section, the knob in the HA field of the SELECTED CHANNEL VIEW screen will move in tandem with the encoder.

NOTE

- *The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*
- *If the level meter does not show any movement even if you have raised the [HA] encoder, it is possible that the INPUT channel selected by its [SEL] key does not match the INPUT jack to which your mic or instrument is connected. Make sure that the connections and the selection of the [SEL] key are correct. If necessary, recall scene number 000 once again.*

**5 Press the [SEL] key of another input channel, and adjust the head amp gain in the same way.**

When you press a [SEL] key to select another channel, the channel shown in the SELECTED CHANNEL VIEW screen will change accordingly.

HINT

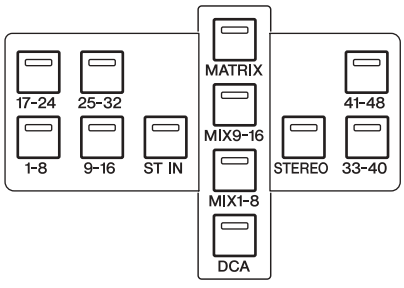
- *In the SELECTED CHANNEL VIEW screen you can also switch the head amp's phantom power on/off, and switch the phase between normal and reverse. To do this, press the HA/PHASE field to access the popup window. (For details on the procedure → p. 61).*

## ● Using the Centralogic section (settings for eight channels)

Use the Centralogic section and the OVERVIEW screen to make head amp settings for up to eight channels. This method is convenient when you want to adjust the same parameter for multiple channels at once.

**1 Connect a mic or instrument to an INPUT jack. (For details on making connections → p. 46).**

**2 Press a navigation key in the NAVIGATION KEYS section so that the input channels you want to control are assigned to the Centralogic section.**




The navigation keys of the NAVIGATION KEYS section select the eight channels or DCA groups that will be controlled by the Centralogic section. In this section, the following keys correspond to input channels.

- **[IN 1-8] key**
- **[IN 9-16] key**
- **[IN 17-24] key**
- **[IN 25-32] key**

  These keys select INPUT channels 1–8, 9–16, 17–24, and 25–32 respectively.

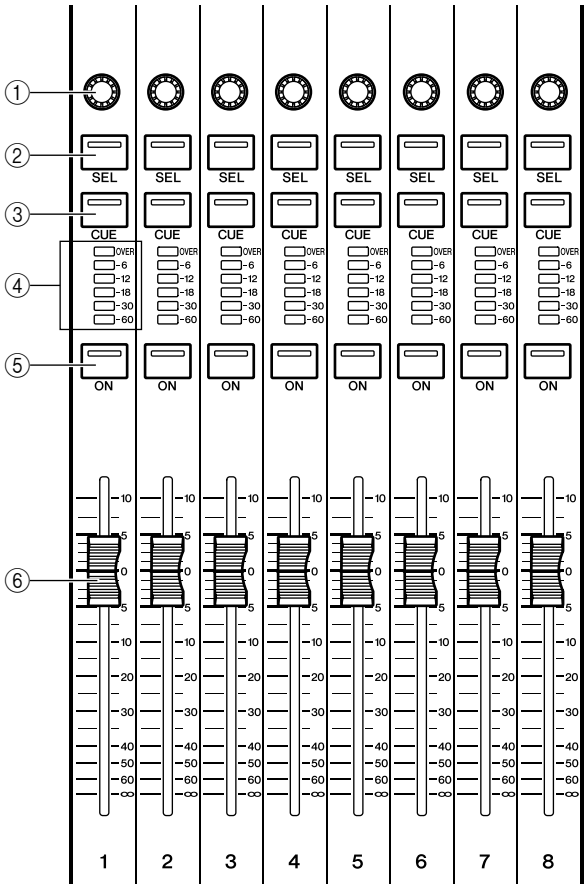
- **[ST IN] key**

  This key selects ST IN channels 1–4.

- **[IN 33-40] key (M7CL-48/48ES only)**
- **[IN 41-48] key (M7CL-48/48ES only)**

  These keys select INPUT channels 33–40 and 41–48 respectively.

When you press a navigation key, the OVERVIEW screen will appear in the display, and the principal parameters of the up to eight selected channels are shown simultaneously. You can use the keys and faders of the Centralogic section to control the level, on/off status, and cue operations of the selected eight channels or DCA groups.

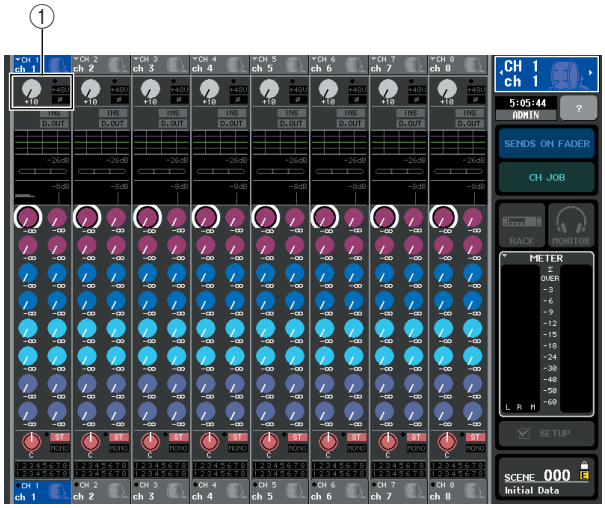



① **Multi-function encoders**
② **[SEL] keys**
③ **[CUE] keys**
④ **Level meters**
⑤ **[ON] keys**
⑥ **Faders**

HINT

- *You can rapidly switch from the SELECTED CHANNEL VIEW screen to the OVERVIEW screen by pressing one of the multifunction encoders in the Centralogic section.*

For example, the following illustration shows the OVERVIEW screen for INPUT channels 1–8. The knobs of the HA/PHASE field indicate the amount of HA gain for each channel.




① **HA/PHASE field**

### 3 Press a knob in the HA/PHASE field of the screen to select it.

When you press a knob shown in the OVERVIEW screen, a bold frame is displayed around the horizontal row of knobs of the same type. This frame indicates the you can use the multifunction encoders of the Centralogic section to operate the corresponding knobs.

### 4 While performing on the mic or instrument, use the Centralogic section's multifunction encoders 1–8 to adjust the HA gain of each channel.

Adjust the level as high as possible without allowing the OVER segment of the channel level meter in the Centralogic section to light when the mic or instrument is being played at its loudest volume.

The input level is also shown by the level meter of the corresponding INPUT section or ST IN section.

NOTE

- *The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*

HINT

- *In the OVERVIEW screen you can also switch the head amp's phantom power on/off, and switch the phase between normal and reverse. To do so, press the selected knob in the HA/PHASE field once again to access the popup window. (For details→ p. 61).*

### 5 Use the navigation keys to switch the eight channels controlled by the Centralogic section, and adjust the gain for other input channels in the same way.

## Sending an input channel signal to the STEREO bus

This section explains how to adjust the gain to set the level of the signal sent from an input channel to the STEREO bus, and adjust the pan/balance so that the signal can be monitored from external speakers connected to the STEREO channel. The following procedure lets you check whether the connections from the mic or instrument to the external speakers are appropriate.
In this case as well, you can either use the SELECTED CHANNEL section to make settings for one channel at a time, or use the Centralogic section to make settings for up to eight channels at a time.

### ● Using the SELECTED CHANNEL section (settings for one channel)

### 1 Press the [SEL] key of the input channel you want to control.

### 2 Press one of the encoders in the SELECTED CHANNEL section.

The SELECTED CHANNEL VIEW screen for the selected channel will appear.

① **TO ST PAN/BALANCE field**

### 3 In the To ST PAN/BALANCE field of the SELECTED CHANNEL VIEW screen, make sure that the ST button is on (white characters on a pink background).

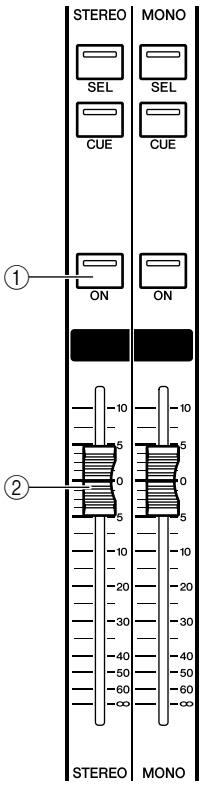
In the TO ST PAN/BALANCE field you can use the ST/MONO button to switch the signal sent from the input channel to the STEREO/MONO buses on/off. The knob in this field indicates the pan/balance of the signal sent to the STEREO bus.

If the ST button is off (black characters on blue background), press the button to switch it on.

### 4 Verify that in the top panel, the [ON] of the corresponding input channel is on.

The [ON] turns the corresponding channel on or off. If the [ON] key is off (LED dark), press the key to turn it on (LED lit).

### 5 In the STEREO/MONO MASTER section, make sure that the [ON] key of the STEREO channel is on, and raise the STEREO channel fader to 0 dB.



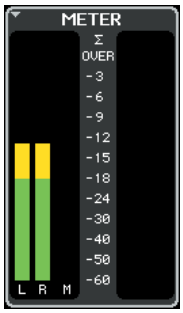

① **STEREO channel [ON] key**
② **STEREO channel fader**

### 6 Raise the fader of the currently selected input channel to an appropriate volume.

In this state, you should now hear sound from the speaker system that is patched to the STEREO channel.

If you don't hear sound, check whether the LR meters are moving in the METER field of the function access area.

**[METER field of the function access area]**




● **If the LR meters are moving**
It may be that the STEREO channel is not correctly patched to the output jacks that are connected to your speaker system. Check the output port patching p. 105.

● **If the LR meters are not moving**
Make sure that signals are being routed correctly to the patched input channels.

HINT

*• The signal being output from the STEREO channel can also be monitored using headphones connected to the PHONES OUT jack located below the front pad p. 154.*

### 7 To adjust the pan/balance of the signal sent from the input channel to the STEREO bus, turn the [PAN] encoder of the SELECTED CHANNEL section.

When you turn the [PAN] encoder, the knob in the HA field of the SELECTED CHANNEL VIEW screen will move in tandem with the encoder.

### 8 Press the [SEL] key of another input channel, then repeat the procedure from Step 2.

When you press a [SEL] key to select another channel, the channel shown in the SELECTED CHANNEL VIEW screen will change accordingly.

## ● Using the Centralogic section (settings for eight channels)

Here's how to use the Centralogic section and OVERVIEW screen to adjust the input level and pan/balance sent to the STEREO bus for up to eight signals at a time.

### 1 Press a navigation key in the NAVIGATION KEYS section so that the input channels you want to control are assigned to the Centralogic section.

The selected eight channels are shown in the OVERVIEW screen.

① **TO STEREO/MONO field**

### 2 Make sure that in the TO STEREO/MONO field of the screen, the ST symbol of each channel is on (white characters on pink background).

The ST/MONO symbol in the OVERVIEW screen indicates the on/off status of the signal sent from that input channel to the STEREO/MONO buses. If the ST symbol is off (gray characters on a black background), click the TO ST PAN/BALANCE field of the SELECTED CHANNEL VIEW page to display a popup window, then switch the symbol to on (→ p. 54).

### 3 In the Centralogic section, verify that the [ON] of the corresponding input channel is on.

### 4 In the STEREO/MONO MASTER section, make sure that the [ON] key of the STEREO channel is on, and raise the STEREO channel fader to 0 dB.

### 5 In the Centralogic section, raise the fader of the corresponding input channel to an appropriate volume.

In this state, you should now hear sound from the speaker system that is patched to the STEREO channel.

HINT

- *You can also adjust the input level using the faders of the INPUT section or ST IN section instead of the faders of the Centralogic section.*

If you don't hear sound, check whether the LR meters are moving in the METER field of the function access area.

**● If the LR meters are moving**

It may be that the STEREO channel is not correctly patched to the output jacks that are connected to your speaker system. Check the output port patching (→ p. 105).

**● If the LR meters are not moving**

Make sure that signals are being routed correctly to the patched input channels.

HINT

- *The signal being output from the STEREO channel can also be monitored using headphones connected to the PHONES OUT jack located below the front pad p. 154.*

### 6 To adjust the pan/balance of the signal sent from each input channel to the STEREO bus, press a knob in the TO STEREO/MONO field of the screen to select it, and turn the multifunction encoders of the Centralogic section.

When you turn a multifunction encoder, the knob in the TO STEREO/MONO field of the OVERVIEW screen will also turn.

### 7 Use the navigation keys to switch the eight channels controlled by the Centralogic section, and make adjustments for other input channels in the same way.

# Chapter 5
# Input channel operations

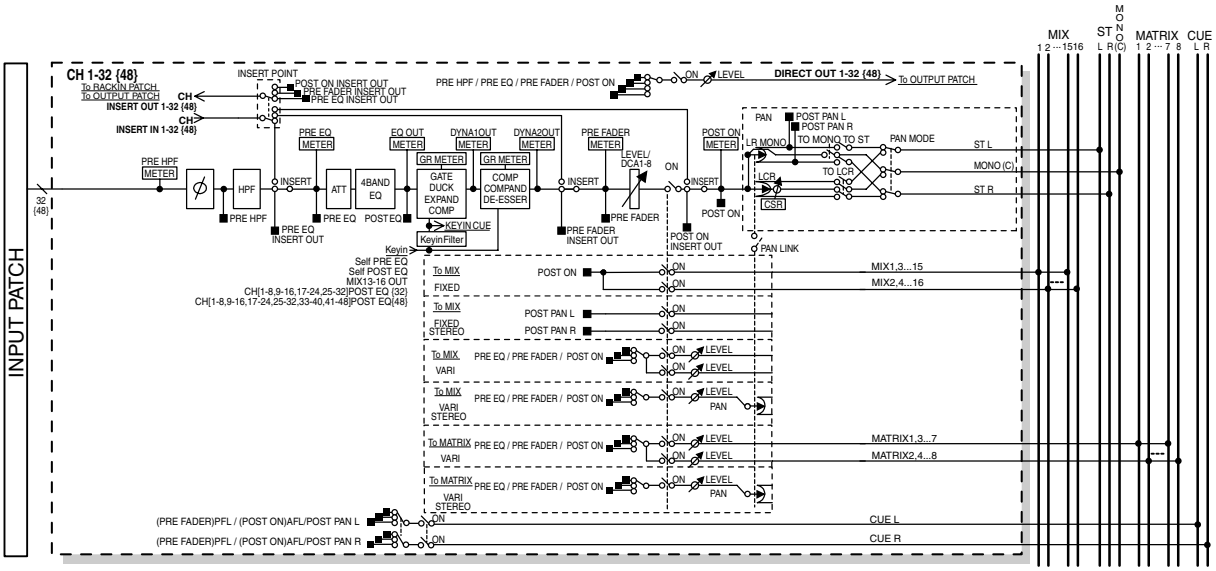
This chapter explains operations for input channels (INPUT channels and ST IN channels).

## Signal flow for input channels

The input channels are the section that processes the signals received from the rear panel input jacks or slots 1–3, and sends them to the STEREO bus, MONO bus, MIX buses, and MATRIX buses. There are two types of input channel, as follows.

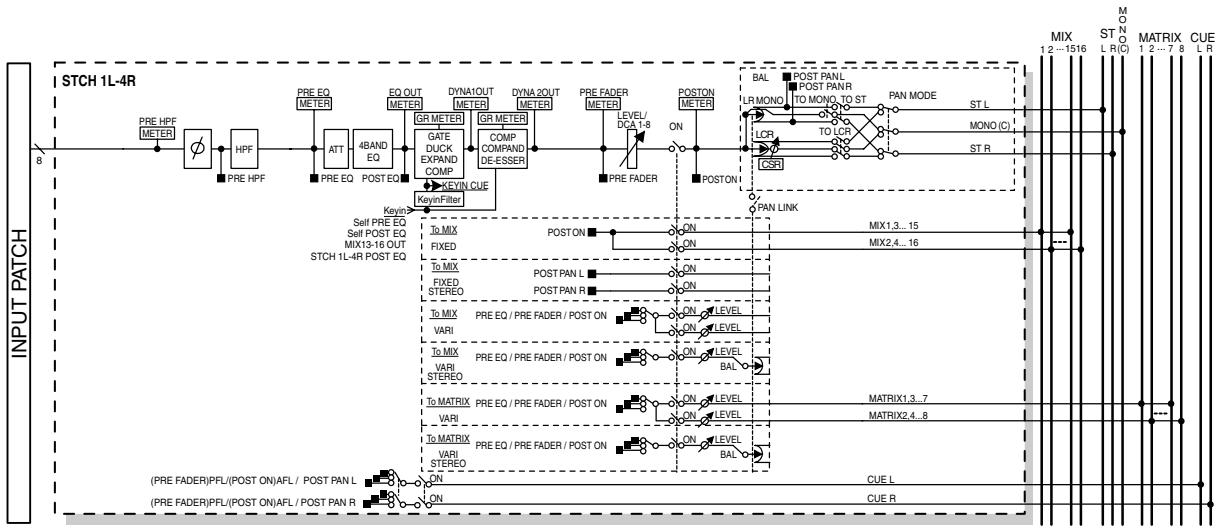
### ■ INPUT channels

These channels are used to process monaural signals. When the M7CL is in the default state, the input signals from INPUT jacks are assigned to these channels.




### ■ ST IN channels

These channels are used to process stereo signals. When the M7CL is in the default state, the signals from RACK 5–8 are assigned to these channels.



● **INPUT PATCH**
This assigns an input signal to the input channel.

● **ø (Phase)**
Switches the phase of the input signal.

● **HPF (High Pass Filter)**
This is a high pass filter that cuts the region below the specified frequency.

● **ATT (Attenuator)**
Attenuates/boosts the level of the input signal.

● **4 BAND EQ (4 band equalizer)**
A parametric EQ with four bands; HIGH, HIGH MID, LOW MID, and LOW.

● **DYNAMICS 1**
This is a dynamics processor that can be used for gating, ducking, expander, or compressor.

● **DYNAMICS 2**
This is a dynamics processor that can be used as a compressor, compander, or de-esser.

● **LEVEL/DCA 1–8**
Adjusts the input level of the channel.

● **ON (On/off)**
Turns the input channel on/off. If off, that channel is muted.

● **PAN**
This adjusts the panning of the signal sent from the INPUT channel to the STEREO bus. If necessary, you can turn on PAN LINK in the BUS SETUP popup window so that the setting of this parameter will also be applied to the signal sent to two MIX or MATRIX buses that are set to stereo.

● **BALANCE**
On ST IN channels, the BALANCE parameter is used instead of PAN. The BALANCE parameter adjusts the volume balance of the left/right signals sent from the ST IN channel to the STEREO bus. If necessary, you can turn on PAN LINK in the BUS SETUP popup window so that the setting of this parameter will also be applied to the signal sent to two MIX or MATRIX buses that are set to stereo.

● **LCR (Left/Center/Right)**
This sends the signal of the input channel as a three-channel output (the MONO (C) channel and the L/R channels) to the STEREO bus / MONO bus.

● **MIX ON/OFF (MIX send on/off)**
This is an on/off switch for the signal sent from the input channel to MIX buses 1–16.

● **MIX LEVEL 1-16 (MIX send level 1–16)**
This adjusts the send level of the signal sent from the input channel to VARI type MIX buses 1–16. As the position from which the signal is sent to the MIX bus, you can choose from the following; immediately before ATT, pre-fader, or post-fader.

● **MATRIX ON/OFF (MATRIX send on/off)**
This is an on/off switch for the signal sent from the input channel to MATRIX buses 1–8.

● **MATRIX LEVEL 1–8 (MATRIX send levels 1–8)**
Adjusts the send level of the signal sent from the input channel to MATRIX buses 1–8. As the position from which the signal is sent to the MATRIX bus, you can choose from the following; immediately before ATT, pre-fader, or post-fader.

● **INSERT (INPUT channels only)**
You can patch the desired output/input ports to insert an external device such as an effect processor. For the position of the insert-out/insert-in point, you can choose immediately before ATT, immediately before the fader, or immediately after the [ON] key.

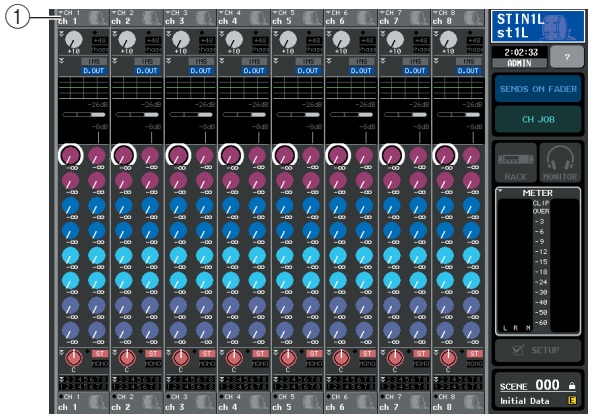
● **DIRECT OUT (INPUT channels only)**
This can be patched to any output port, and the input signal sent directly from that output port. For the position of the direct output, you can choose immediately before HPF, immediately before ATT, immediately before the fader, or immediately after the [ON] key.

● **METER**
This meters the level of the input channel. You can switch the position at which the level is detected.

# Specifying the channel name and icon

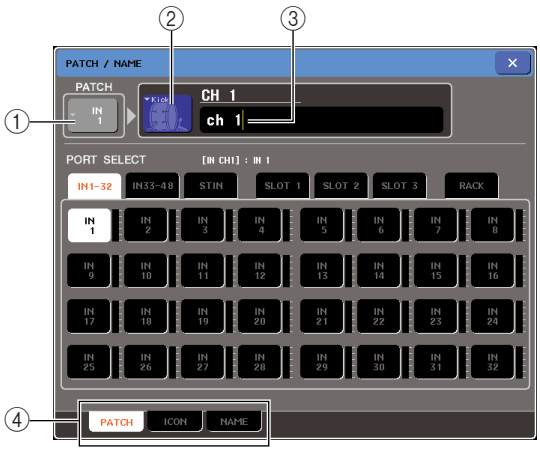
On the M7CL, the name and icon shown in the screen can be specified for each input channel. Here we will explain how to specify the channel name and icon.

## 1 Use the navigation keys to access the OVERVIEW screen containing the input channel whose channel name / icon you want to assign.




① **Channel number / Channel name field**

## 2 Access the PATCH/NAME popup window by pressing the channel number / channel name field of the channel whose channel name / icon you want to assign.




The popup window shows the following items.

### ① Input port button

This indicates the currently selected input port. If you press this button when selecting an icon or changing the channel name, you will return to the input port select screen.

### ② Icon button

This indicates the icon selected for that channel. When you press this button, a screen will appear in which you can select an icon or sample name.

### ③ Channel name input box

This indicates the name assigned to that channel. When you press this field, a keyboard window allowing you to assign a name will appear.

### ④ Tabs

Use these tabs to switch between items.

## 3 To select the icon for that channel, press the icon button.

The lower part of the popup window will change as follows.

### ① Icon select buttons

These buttons select the icon used for this channel.

### ② Sample name select buttons

These buttons select a sample name associated with the currently selected icon. When you press a button, that sample name will be input to the channel name field.

## 4 Use the icon select buttons to select the icon you want to use for that channel.

The selected icon is shown in the icon button in the upper part of the window.

## 5 To edit the channel name based on a sample name, use the sample name select buttons to select a sample name. The sample name you selected will be input to the channel name field in the upper part of the window.

To enter the channel name directly, proceed to Step 6.

HINT

- *You can add or edit characters in the channel name field even after you've entered the sample name. If you want to assign consecutively numbered channel names such as "Vocal1" and "Vocal2," this can be easily done by entering the sample name and then adding a number.*

**6 If you want to enter a channel name directly (or edit the sample name that was entered), press the channel name field in the upper part of the window.**

The keyboard window will appear in the lower part of the window, allowing you to enter or edit the characters. For details on how to use the keyboard window, refer to p. 34.

**7 Use the [SEL] keys to switch input channels, and specify the icon or channel name for other channels in the same way.**

When the PATCH/NAME popup window is shown, you can use the [SEL] keys to switch the channel being edited.

**8 When you're finished with your input, press the "×" symbol in the upper right of the window.**

HINT

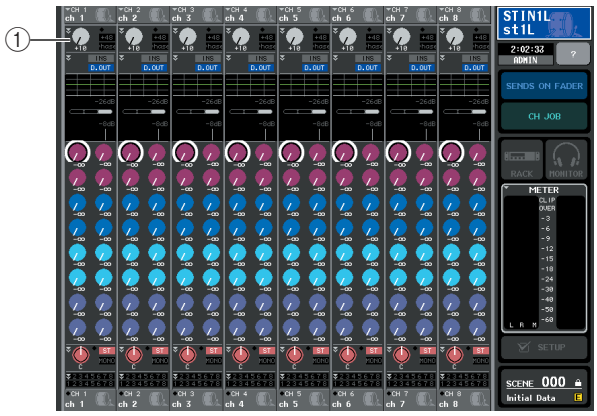
- *You can press the TAB button to switch to the next channel. You can press the ENTER button to close the popup window in the same way as using the "×" symbol.*

# Making HA (Head Amp) settings

This section explains how to make HA (Head Amp) related settings (phantom power on/off, gain, phase) for each input channel.

**1 If you only want to adjust the HA gain, you can do so by using the HA encoder of the SELECTED CHANNEL section. (p. 19)**

**2 If you want to edit detailed parameters such as phantom power on/off or phase, use the navigation keys to access the OVERVIEW screen that includes the input channel whose HA you want to edit.**

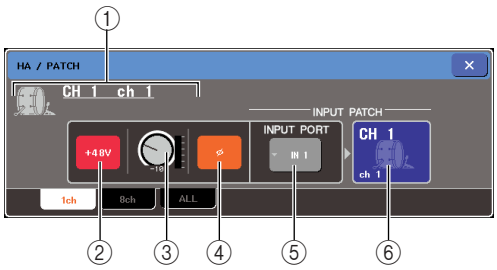



① **HA/PHASE field**

**3 Press the HA/PHASE field of the channel whose HA you want to adjust; the HA/PATCH popup window will appear.**

This popup window can be viewed in three types of view (1 ch, 8 ch, ALL), and you can use the tabs at the bottom of the screen to switch between these types. These windows include the following items.

**[HA/PATCH popup window (1 ch)]**




Here you can make HA-related settings for the currently selected channel.

### ① Icon / Channel number / Channel name

This shows the icon, channel number, and channel name for that channel.

### ② +48V button

This switches the phantom power on (red) or off (black) for the head amp assigned to this channel.

NOTE

- *If you've turned off the phantom power master setting in the SETUP screen SYSTEM SETUP field, phantom power will not be supplied even if the +48V button is turned on for each channel.*

**⚠ CAUTION**

- ***If you don't need phantom power, be sure to turn this button off.***
- ***Before you turn phantom power on, make sure that no devices other than phantom-powered devices, such as a condenser microphone, are connected. Otherwise, you risk damaging the devices.***
- ***Do not connect or disconnect a device while phantom power is applied. Doing so can damage the connected device and/or the unit itself.***
- ***To protect your speaker system, leave the power amps (powered speakers) turned off when switching the phantom power on/off. We also recommend that you set all output level faders to the minimum position. Otherwise, high-volume output may damage your hearing or equipment.***

### ③ GAIN knob

This indicates the gain of the head amp assigned to this channel. To adjust this value, operate multifunction encoder 3. The level meter located at the immediate right of the knob indicates the input level for the corresponding port.

### ④ ø (Phase) button

This switches the head amp assigned to the channel between normal phase (black) and reverse phase (orange).

### ⑤ INPUT PORT popup button

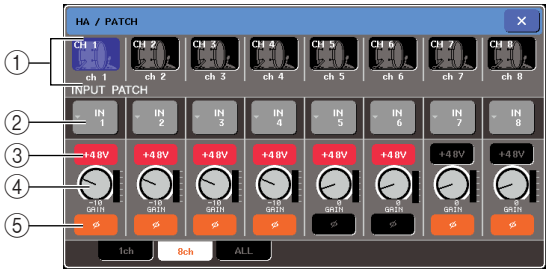
This shows the input port assigned to this channel. You can press this button to access the INPUT PORT SELECT popup window, where you can select the input port for each channel.

### ⑥ Icon / Channel Name button

This shows the number, icon, and channel name for that channel. You can press this button to access the PATCH / NAME popup window, where you can edit the input port patching and specify the channel name.

### [HA/PATCH popup window (8 ch)]

Here you can make HA-related settings for a group of eight channels.




#### ① Channel select button

This shows the icon, channel number, and channel name for the channel. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

#### ② INPUT PATCH button

This indicates the currently selected input port. You can press this button to access the INPUT PORT SELECT popup window, where you can select the input port for each channel.

#### ③ +48V button

This switches the phantom power on (red) or off (black) for the head amp assigned to this channel.

#### ④ GAIN knob

This indicates the gain of the head amp assigned to this channel. Use multifunction encoders 1–8 to adjust the value. The level meter located at the immediate right of the knob indicates the input level for the corresponding port.

#### ⑤ ø (Phase) button

This switches the head amp assigned to the channel between normal phase (black) and reverse phase (orange).

### [HA/PATCH popup window (ALL)]

This window shows the head amp settings of all input channels. Here you can also adjust the head amp gain in groups of the selected eight channels.

#### ① Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

#### ② GAIN knob

This indicates the gain of the head amp assigned to the channel. To adjust the value, press the knob to select it, and operate multifunction encoders 1–8.

The indicator located at the immediate right of the knob indicates the presence or absence of a signal for the corresponding port.

#### ③ +48V

This indicates the phantom power on (red) or off (black) status for the head amp assigned to the channel.

#### ④ ø (Phase)

This indicates either normal phase (black) or reverse phase (orange) for the head amp assigned to the channel.

## 4 Access either the 1 ch or 8 ch HA/PATCH popup window.

## 5 Use the on-screen buttons or the multifunction encoders to edit the head amp gain, phase, and phantom power on/off settings.

NOTE

- *The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*
- *The GAIN knob, +48V button, and ø button are valid only for channels whose assigned input port is an INPUT jack, ST IN jacks (M7CL-32/48), OMNI IN jacks (M7CL-48ES), or a slot that is connected to an external head amp device (e.g., Yamaha AD8HR, SB168-ES). (For details on connecting external head amp devices → p. 190).*

## 6 Perform the same operations for other input channels as desired.

If you are viewing the 1 ch HA/PATCH popup window, you can also use the [SEL] keys to switch the channel for editing.

If you are viewing the 8 ch HA/PATCH popup window, you can use the navigation keys to switch the channels being controlled in groups of eight channels.

## 7 When you're finished editing, press the "×" symbol in the upper right of the window.

# Sending the signal from an input channel to the STEREO/MONO buses

This section explains how to send the signal of an input channel to the STEREO bus or MONO bus.
The STEREO bus and MONO bus are used mainly to send signals to the main speakers. There are two ways to send signals to the STEREO bus or MONO bus; ST/MONO mode and LCR mode. You can select the mode individually for each channel. These modes differ in the following ways.

## ■ ST/MONO mode

This mode sends the signal from the input channel to the STEREO bus and to the MONO bus independently.

- The signal sent from the input channel to the STEREO bus and to the MONO bus can be switched on/off individually.
- The panning of the signal sent from an INPUT channel to the STEREO bus L/R is controlled by the TO ST PAN knob. (The signal sent to the MONO bus is not affected by this knob.)
- The left/right volume balance of the signal sent from a ST IN channel to the STEREO bus is controlled by this knob. (The signal sent to the MONO bus is not affected by this knob.)

## ■ LCR mode

This mode sends the signal of the input channel to a total of three buses (STEREO (L/R) and MONO (C)) together.

- The signal sent from the input channel to the STEREO bus and MONO bus will be switched on/off as a whole.
- The CSR (Center Side Ratio) knob specifies the level ratio between the signal sent from the input channel to the STEREO (L/R) bus and to the MONO (C) bus.
- The TO ST PAN knob / BALANCE knob specifies the level of the signal sent from the input channel to the STEREO (L/R) bus and MONO (C) bus.

HINT

- *If you want to monitor the signal of the STEREO bus or MONO bus through headphones etc., you should press the MONITOR button in the function access area to select "LCR" as the monitor source before you continue with the following procedure (→ p. 154).*

**1 Make sure that an input source is connected to the input channel you're adjusting, and set the phantom power supply, gain, and phase of the head amp to obtain the optimum input signal (→ p. 61).**

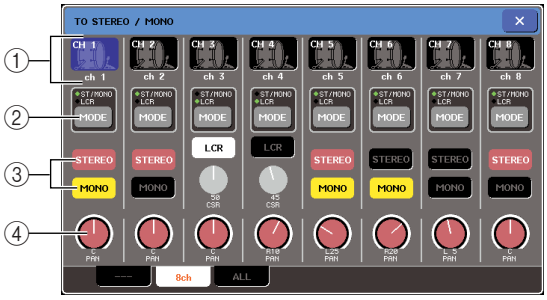
**2 Use the navigation keys to access the OVERVIEW screen that includes the input channel you want to send to the STEREO/MONO bus.**

① **STEREO/MONO field**

**3 In the STEREO/MONO field, press a knob to select the channel you want to adjust, and then press the knob once again to access the TO STEREO/MONO popup window.**

In the TO STEREO/MONO popup window you can control the signal that is sent from the input channel to the STEREO/MONO bus. You can view this popup window as two types, 8ch and ALL; use the tabs below the window to switch between them. These windows include the following items.

**[TO STEREO/MONO popup window (8 ch)]**




Here you can control the on/off and pan/balance settings of the signal sent from input channels to the STEREO (L/R) bus and MONO (C) bus, in groups of eight channels.

### ① Channel select button
This shows the icon, channel number, and channel name for the channel. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

### ② MODE button
This button selects either ST/MONO mode or LCR mode as the way in which the signal will be sent to the STEREO bus or MONO bus. This mode can be specified individually for each channel.

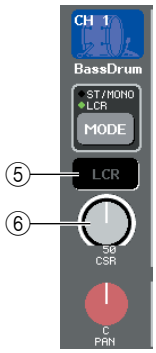
The two modes will alternate each time you press the button. An indicator (ST/MONO or LCR) immediately above the button will light to indicate the currently selected mode.

### ③ STEREO/MONO buttons
These buttons are individual on/off switches for the signal that is sent from each channel to the STEREO bus / MONO bus when the MONO button is set to ST/MONO mode.

### ④ TO ST PAN/TO ST BALANCE knob
For INPUT channels, this acts as the PAN knob that adjusts the left/right panning of the signal sent to the STEREO bus.

For ST IN channels, this acts as the BALANCE knob that adjusts the volume of the left and right signals sent to the STEREO bus. To adjust the value, press the knob to select it, and operate the corresponding multifunction encoder.

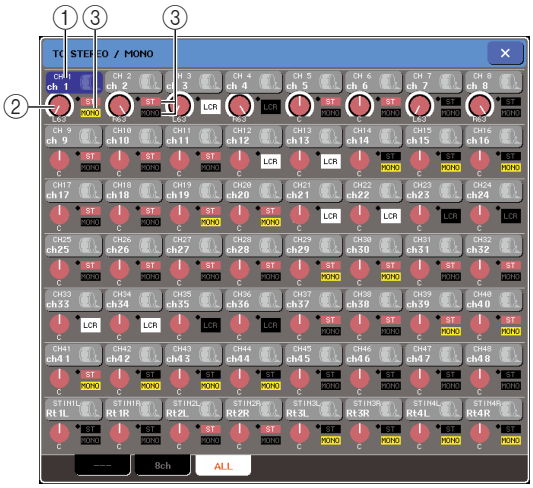
If the MODE button is set to LCR mode, the following button and knob are displayed instead of the STEREO/MONO button (③).




### ⑤ LCR button
This button is an overall on/off switch for the signals sent from the channel to the STEREO bus and MONO bus. If this button is off, no signals will be sent from the corresponding input channel to the STEREO bus or MONO bus.

### ⑥ CSR knob
This knob adjusts the relative level of the signals sent from the channel to the STEREO (L/R) bus and to the MONO (C) bus, in a range of 0–100%. To adjust the value, press the knob to select it, and operate the corresponding multifunction encoder.

### [TO STEREO/MONO popup window (ALL)]
The screen shows the status of the signals sent from all input channels to the STEREO bus / MIX bus. Here you can also adjust the pan or balance in groups of the selected eight channels.




### ① Channel select button
This indicates the channel number, the icon selected for that channel, and the channel name. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

### ② TO ST PAN/TO ST BALANCE knob
For INPUT channels, this acts as the PAN knob that adjusts the left/right panning of the signal sent to the STEREO bus. For ST IN channels, this acts as the BALANCE knob that adjusts the volume of the left and right signals sent to the STEREO bus.

To adjust the value, press the knob to select it, and operate the corresponding multifunction encoder.

If the signal reaches the overload point at any meter detection point in that channel, the indicator at the right of the knob will light.

### ③ ST/MONO indicator
If a channel is set to ST/MONO mode, this individually indicates the on/off status of the signal sent from the channel to the STEREO bus / MONO bus.

If a channel is set to LCR mode, the LCR indicator is displayed in this location. The LCR indicator indicates the on/off status of all signals sent from that channel to the STEREO bus and MONO bus.

## 4 Access the eight-channel TO STEREO/MONO popup window.

## 5 Use the MODE button to select either ST/MONO mode or LCR mode for each channel.

## 6 In the STEREO / MONO MASTER section of the top panel, make sure that the [ON] key of the STEREO channel / MONO channel is turned on, and raise the fader to an appropriate position.

**7 In the INPUT section or ST IN section of the top panel, make sure that the [ON] key is turned on for the input channel you want to control, and raise the fader to an appropriate position.**

The subsequent steps will differ depending on whether ST/MONO mode or LCR mode was selected for the channel in step 5.

### ● Channels for which ST/MONO mode is selected

**8 In the TO STEREO/MONO popup window, use the STEREO/MONO button to turn the signal sent from the input channel to the STEREO bus / MONO bus on or off.**

For a channel that is set to ST/MONO mode, the signals sent to the STEREO bus and to the MONO bus can be switched on/off individually.

**9 In the TO STEREO/MONO popup window, use the TO ST PAN knob to set the panning of the signal sent from the input channel to the STEREO bus.**

### ● Channels for which LCR mode is selected

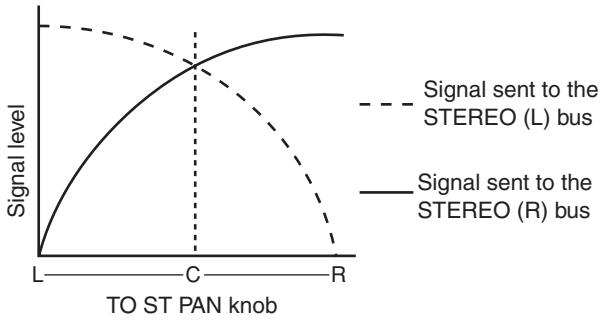
**8 In the TO STEREO/MONO popup window, use the LCR button to turn the signals sent from the input channel to the STEREO bus / MONO bus on or off together.**

For a channel that is set to LCR mode, the signals sent to the STEREO bus and to the MONO bus are switched on/off together.

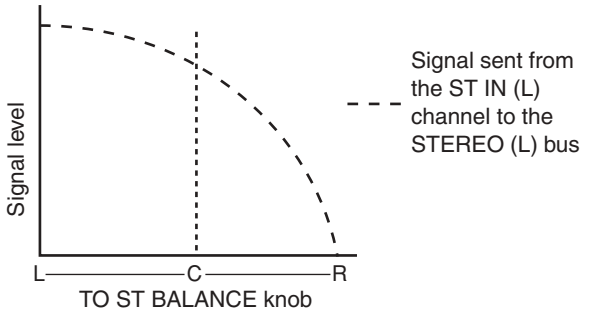
**9 In the TO STEREO/MONO popup window, use the CSR knob to adjust the level difference between the signals sent from that channel to the STEREO (L/R) bus and to the MONO (C) bus.**

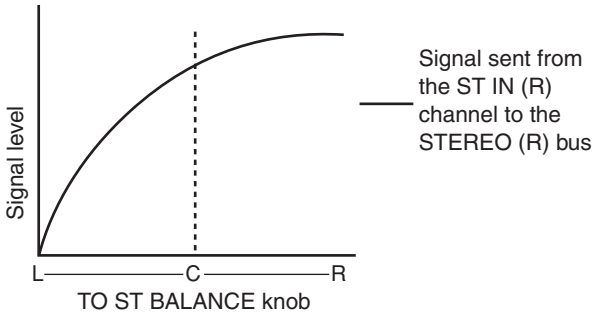
**10 In the TO STEREO/MONO popup window, use the TO ST PAN knob to set the panning of the signal sent from the input channel to the STEREO bus and MONO (C) bus.**

If the CSR knob is set to 0%, operating the TO ST PAN knob of an INPUT channel will change the level of the signals sent to the STEREO (L/R) bus and MONO (C) bus as shown in the following diagram. In this case, the TO ST PAN knob operates as a conventional PAN knob, and no signal is sent to the MONO (C) bus.

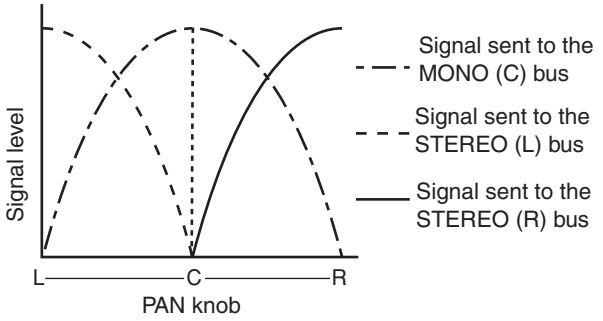



Operating the TO ST BALANCE knob of a ST IN channel will change the level of the signals sent from the ST IN L/R channels to the STEREO (L/R) bus and MONO (C) bus as shown in the following diagram. In this case, the TO ST PAN knob operates as a conventional BALANCE knob, and no signal is sent to the MONO (C) bus.

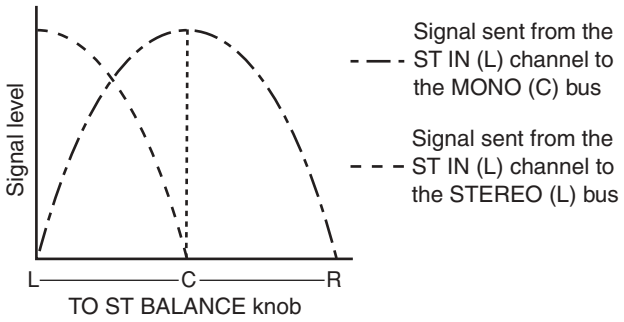


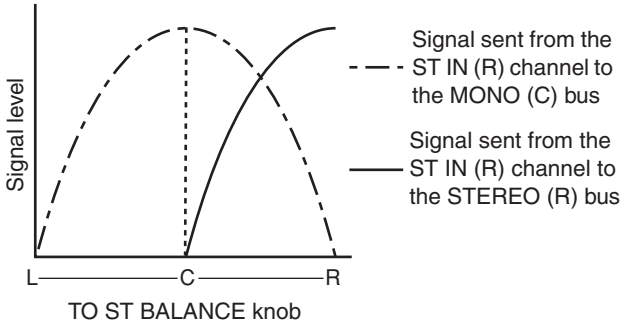




If the CSR knob is set to 100%, operating the INPUT TO ST PAN knob will change the level of the signals sent to the STEREO (L/R) bus and MONO (C) bus as shown in the following diagram.



Operating the TO ST BALANCE knob of a ST IN channel will change the level of the signals sent from the ST IN L/R channels to the STEREO (L/R) bus and MONO (C) bus as shown in the following diagram.


Signal level
L
C
R
TO ST BALANCE knob
Signal sent from the ST IN (L) channel to the MONO (C) bus
Signal sent from the ST IN (L) channel to the STEREO (L) bus


Signal level
L
C
R
TO ST BALANCE knob
Signal sent from the ST IN (R) channel to the MONO (C) bus
Signal sent from the ST IN (R) channel to the STEREO (R) bus

# Sending the signal from an input channel to a MIX bus

This section explains how to send the signal from an input channel to MIX buses 1–16. MIX buses are used mainly for the purpose of sending signals to foldback speakers on stage, or to effect processors. You can send a signal from an input channel to a MIX bus in the following three ways.

## ■ Using the SELECTED CHANNEL section

In this method, you use the encoders of the SELECTED CHANNEL section to adjust the send levels to the MIX buses. When using this method, the signals sent from a specific input channel to all MIX buses can be adjusted simultaneously.

## ■ Using the Centralogic section

In this method, you use the multifunction encoders of the Centralogic section to adjust the send levels to the MIX buses. When using this method, the signals sent from eight consecutive input channels to a specific MIX bus can be adjusted simultaneously.

## ■ Using the faders (SENDS ON FADER mode)

In this method, you switch the M7CL to SENDS ON FADER mode, and use the faders of the top panel to adjust the send levels to the MIX buses. When using this method, the signals sent from all input channels to a specific MIX bus can be adjusted simultaneously.



## Using the SELECTED CHANNEL section

Here's how you can use the encoders of the SELECTED CHANNEL section to adjust the send levels of the signals sent from a specific input channel to all MIX buses.

**1 Make sure that an output port is assigned to each MIX bus to which you want to send signals, and that your monitor system or external effect processor etc. is connected to the corresponding output port.**

For details on assigning an output port to a MIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

**2 Use the [SEL] keys of the top panel to select the input channel that will send signals to the MIX buses.**

**3 Press any one of the encoders of the SELECTED CHANNEL section to access the SELECTED CHANNEL VIEW screen.**

The SELECTED CHANNEL VIEW screen will show all the mix parameters of the corresponding input channel. Adjustments of send levels to the MIX/MATRIX buses is done in the TO MIX/TO MATRIX field of this screen.

### ① TO MIX/TO MATRIX field

In this field you can switch the on/off status and adjust the level of the signal sent from the input channel to the MIX buses / MATRIX buses.

### ② TO MIX/TO MATRIX buttons

These buttons select the send destination that is controlled by the TO MIX/TO MATRIX field. If the TO MIX button is on, you are controlling the signals sent to the MIX buses.

### ③ TO MIX SEND LEVEL knob

Adjusts the send level of the signal sent from the input channel to MIX bus. To adjust the send levels, use the encoders of the SELECTED CHANNEL section.

If the send-destination MIX bus is set to stereo, the left knob of the two adjacent knobs will operate as a PAN knob (for a ST IN channel, the BALANCE knob). If the TO MIX SEND ON/OFF button (④) is off, the knob will be dimmed.

### ④ TO MIX SEND ON/OFF button

This is an on/off switch for the signal sent from the input channel to MIX bus.

An indication of "PRE" in black characters on a white background is shown above these buttons only if PRE (pre-fader) is selected as the position from which the signal is sent from the input channel. This indication is not shown for POST (post-fader). (For details on how to switch between PRE and POST → p. 70).

HINT

- *If PRE is selected as the send position to a MIX bus, you will further be able to select either PRE EQ (immediately before the attenuator) or PRE FADER (immediately before the fader) for each MIX bus (→ p. 234).*

## 4 In the TO MIX/TO MATRIX field in the screen, make sure that the TO MIX button is turned on.

When the TO MIX button is on, the TO MIX/TO MATRIX field shows the knobs and buttons for MIX buses 1–16. If this button is off, press the button to turn it on.

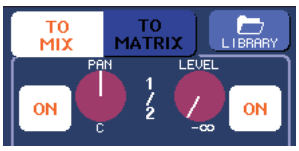
MIX buses can be either a FIXED type whose send level is fixed, or a VARI type whose send level is variable. You can switch between FIXED and VARI types for each two adjacent odd-numbered/even-numbered MIX buses (for the procedure → p. 234).

If the send-destination MIX bus is a FIXED type, a O symbol is displayed instead of the TO MIX SEND LEVEL knob. In this case you won't be able to adjust the send level.

If the send-destination MIX bus is a VARI type, the TO MIX SEND LEVEL knob is displayed in the same color as the corresponding encoder of the SELECTED CHANNEL section. In this case, you can use the corresponding encoder of the SELECTED CHANNEL section to adjust the send level.

If necessary, you can specify two adjacent odd-numbered/even-numbered MIX buses as a stereo bus and link the main parameters (→ p. 234).

If the send-destination MIX bus is assigned as stereo, the left knob of the two adjacent TO MIX SEND LEVEL knobs will operate as the TO MIX PAN knob (for a ST IN channel, it will operate as the TO MIX BALANCE knob).




For an INPUT channel, the right knob will adjust the common send level to the two MIX buses, and the left knob will adjust the panning between the two MIX buses. Turning the left TO MIX SEND LEVEL knob toward the left will increase the amount of signal sent to the odd-numbered MIX bus, and turning it toward the right will increase the amount sent to the even-numbered MIX bus.

For a ST IN channel, the right knob adjusts the common send level for the two MIX buses, and the left knob adjusts the volume balance of the left and right signals sent to the two MIX buses. Turning the left TO MIX SEND LEVEL knob toward the left will increase the amount of signal sent from the L-channel to the odd-numbered MIX bus, and turning it toward the right will increase the amount sent from the R-channel to the even-numbered MIX bus.

HINT

- *If necessary, the TO MIX PAN/TO MIX BALANCE knob setting can be linked with operations of the TO ST PAN/TO ST BALANCE knob shown in the STEREO/MONO field of the OVERVIEW screen (→ p. 234).*

## 5 Make sure that the TO MIX SEND ON/OFF button is turned on for the send-destination MIX bus.

If this button is off, press the button in the screen to turn it on.

## 6 In the SELECTED CHANNEL section, use the MIX SEND LEVEL knobs to adjust the send levels to the MIX buses.

HINT

- *If you want to monitor the signal being sent to a specific MIX bus, use the navigation keys to access the corresponding MIX channel, and press the appropriate [CUE] key in the Centralogic section.*

## 7 You can use the top panel [SEL] keys to switch input channels and control the send level to all MIX buses in the same way.

## Using the Centralogic section

Here's how you can use the multifunction encoders of the Centralogic section to adjust the send level of the signals sent from eight consecutive input channels to a specific MIX bus.

### 1 Make sure that an output port is assigned to each MIX bus to which you want to send signals, and that your monitor system or external effect etc. is connected to the corresponding output port.

For details on assigning an output port to a MIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

### 2 Use the navigation keys to access the OVERVIEW screen that includes the input channel you want to control.

In the OVERVIEW screen, you can use the TO MIX/TO MATRIX field to adjust the send levels to the MIX/MATRIX bus.

#### ① TO MIX/TO MATRIX field

In this field you can switch the on/off status and adjust the level of the signal sent from the input channel to the MIX buses / MATRIX buses. Use the TO MIX/TO MATRIX buttons of the SELECTED CHANNEL VIEW screen to switch the type of send destination shown in this field (→ p. 92).

#### ② TO MIX SEND LEVEL knob

This screen shows the send level of the signals sent from the input channels to the MIX bus. These knobs are shown only when the send-destination MIX bus is a VARI type.

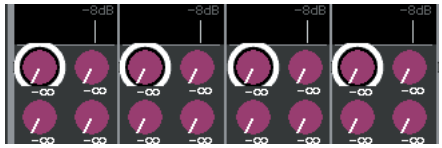
To adjust the send level, press the appropriate knob to select it, and operate multifunction encoders 1–8. If the send-destination MIX bus is set to stereo, the left knob of the two adjacent knobs will operate as a PAN knob (for a ST IN channel, the BALANCE knob). If the TO MIX SEND ON/OFF button is off, the knob will be dimmed.

#### ③ TO MIX SEND ON/OFF button

These are on/off switches for the signal sent from the input channels to the MIX bus. These buttons are shown only when the send-destination MIX bus is a FIXED type.

### 3 Press the TO MIX SEND LEVEL knob for the desired send-destination MIX bus.

A bold frame will appear around all TO MIX SEND LEVEL knobs for that MIX bus.



### 4 Use multifunction encoders 1–8 to adjust the send level of the signals sent from the up to eight input channels to the selected MIX bus.

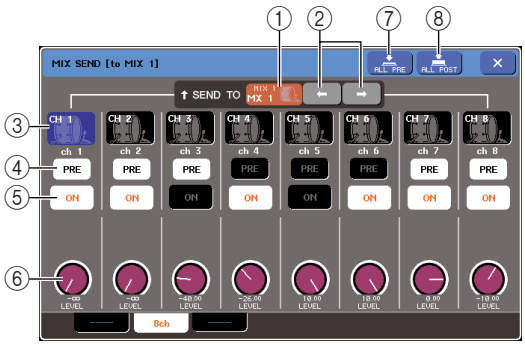
If necessary, you can use the navigation keys to switch the input channels that are assigned to the Centralogic section, and adjust the send levels from other input channels to the selected MIX bus.

HINT

- *If you want to monitor the signal being sent to a specific MIX bus, use the navigation keys to access the corresponding MIX channel in the Centralogic section, and press the [CUE] key for that MIX channel.*

### 5 If you want to make detailed settings for MIX sends, press the TO MIX SEND LEVEL knob inside the bold frame once again.

When you press the currently selected TO MIX SEND LEVEL knob once again, the MIX SEND popup window will appear. The window includes the following items.




#### ① SEND TO

This indicates the number, channel name, and icon of the MIX bus that is currently selected as the send-destination for signals.

#### ② ←/→ buttons

Use these buttons to switch between send-destination buses. You can switch consecutively through MIX buses 1–16 and MATRIX buses 1–8.

#### ③ Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

④ **PRE button**
This button switches the position at which the signal is sent from the input channel to a VARI type MIX bus. The signal is sent from the post-fader position when this button is off, and from the pre-fader position when this button is on.

⑤ **TO MIX SEND ON/OFF button**
These are on/off switches for the signal sent from the input channels to the MIX bus.

⑥ **TO MIX SEND LEVEL knob**
This screen shows the send level of the signal sent from the input channels to the MIX bus. To adjust the level, operate multifunction encoders 1–8.

If the send-destination MIX bus is set to stereo, the TO MIX PAN knob (for a ST IN channel, the TO MIX BALANCE knob) and TO MIX SEND LEVEL knob are shown in this location.

⑦ **ALL PRE button**
This button selects PRE as the position from which signals are sent from all input channels to VARI-type MIX buses.

⑧ **ALL POST button**
This button selects POST as the position from which signals are sent from all input channels to VARI-type MIX buses.

**6 Use the TO MIX SEND ON/OFF buttons to switch the signals sent from the input channels to the currently selected MIX bus on/off.**

**7 If necessary, use the PRE buttons to select the location of the signal that is sent from each input channel to a VARI type MIX bus.**

HINT

- *If the PRE button is on, you can also select PRE EQ (immediately before the attenuator) or PRE FADER (immediately before the fader) for each MIX bus. This setting is made in the BUS SETUP popup window (→ p. 234).*
- *The PRE button is not shown for FIXED type MIX buses.*

**8 Repeat steps 3–6 to adjust the send level for other MIX buses in the same way.**

## Using the faders (SENDS ON FADER mode)

Here's how you can use the faders of the top panel to adjust the signal that is sent from all input channels to a specific MIX bus.

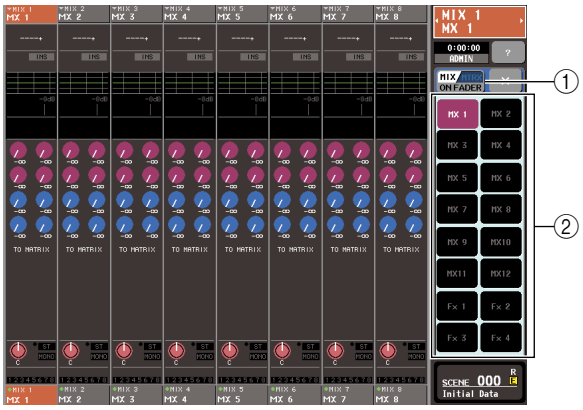
**1 Make sure that an output port is assigned to each MIX bus to which you want to send signals, and that your monitor system or external effect etc. is connected to the corresponding output port.**

For details on assigning an output port to a MIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

**2 In the function access area, press the SENDS ON FADER button.**

The M7CL will switch to SENDS ON FADER mode. The most recently selected group of MIX or MATRIX buses will be assigned to the Centralogic section. The faders of the INPUT section and ST IN section will move to the send level values of each channel for the currently selected MIX or MATRIX bus.

In SENDS ON FADER mode, the function access area in the display will show the button that enable you to switch between MIX ON FADER mode and MATRIX ON FADER mode, and the buttons that enable you to select the destination MIX/MATRIX buses.




① **MIX/MTRX ON FADER switch button**
Pressing this button repeatedly will toggle between MIX ON FADER mode and MATRIX ON FADER mode.

② **MIX/MATRIX bus selection buttons**
These buttons enable you to select the destination MIX/MATRIX buses. Only one button will appear if two buses are paired as stereo.

**3 Press the MIX/MTRX ON FADER switch button to select MIX ON FADER mode.**

In this way, you can use the MIX/MATRIX bus selection buttons to specify the destination MIX buses.

**4 Use the MIX bus selection buttons in the function access area to select the send-destination MIX bus.**

HINT

- *Alternatively, press a SEND LEVEL knob in the SELECTED CHANNEL section to display a popup window, from which you can select a MIX bus.*
- *You can also select a MIX bus by using the navigation keys and the [SEL] keys in the Centralogic section. If the MIX buses or MATRIX buses are selected when you press the [SEL] keys, the setting of the MIX/MTRX ON FADER switch button will be changed automatically.*
- *If you once again press the MIX bus selection button that is currently selected, cue monitoring will be turned on for the corresponding MIX channel. This method is convenient when you want to monitor the signal that is being sent to the selected MIX bus.*

**5 Use the faders of the top panel INPUT section or ST IN section to adjust the send level from the input channels to the selected MIX bus.**

HINT

- *You can assign the SENDS ON FADER function to a user-defined key. This lets you quickly switch to SENDS ON FADER mode for a specific MIX bus, and quickly switch back again.*

**6 Repeat steps 4–5 to adjust the send level for other MIX buses in the same way.**

**7 When you're finished adjusting the MIX send levels, press the "×" symbol in the function access area.**

The function access area display will return to its prior state, and the M7CL will exit SENDS ON FADER mode and return to normal mode.

# Sending the signal from an input channel to the MATRIX buses

This section explains how to send the signal from an input channel to MATRIX buses 1–8. The MATRIX buses are used to produce a mix that is independent of the STEREO bus or MIX buses, mainly for sending to a master recorder or to the monitor system for the musicians.
You can send a signal from an input channel to the MATRIX buses in the following three ways.

## ■ Using the SELECTED CHANNEL section

In this method, you use the encoders of the SELECTED CHANNEL section to adjust the send levels to the MATRIX buses. When using this method, the signals sent from a specific input channel to all MATRIX buses can be adjusted simultaneously.

## ■ Using the Centralogic section

In this method, you use the multifunction encoders of the Centralogic section to adjust the send levels to the MATRIX buses. When using this method, the signals sent from eight consecutive input channels to a specific MATRIX bus can be adjusted simultaneously.

## ■ Using the faders (SENDS ON FADER mode)

With this method, you switch the M7CL to SENDS ON FADER mode, and use the faders on the top panel to adjust the send levels to the MATRIX buses. When using this method, the signals sent from all input channels to a specific MATRIX bus can be adjusted simultaneously.

## Using the SELECTED CHANNEL section

Here's how you can use the encoders of the SELECTED CHANNEL section to adjust the send levels of the signals sent from a specific input channel to all MATRIX buses.

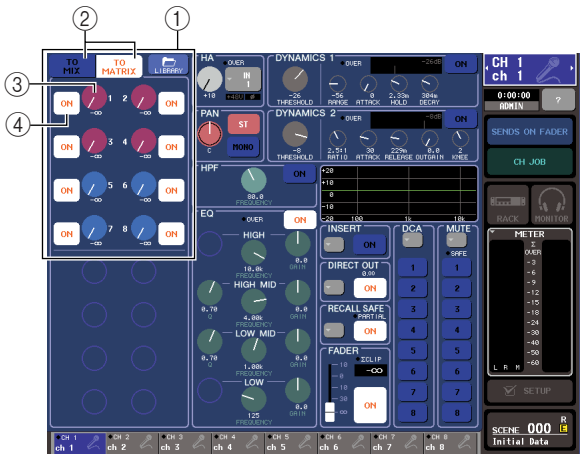
**1 Make sure that an output port is assigned to the MATRIX bus to which you want to send signals, and that your external device is connected to the corresponding output port.**

For details on assigning an output port to a MATRIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

**2 Use the [SEL] keys of the top panel to select the input channel that will send signals to the MATRIX buses.**

**3 Press any one of the encoders of the SELECTED CHANNEL section to access the SELECTED CHANNEL VIEW screen.**

Adjustments of send levels from the input channel to the MIX buses / MATRIX buses is done in the TO MIX/TO MATRIX field of this screen.




### ① TO MIX/TO MATRIX field

In this field you can switch the on/off status and adjust the level of the signal sent from the input channel to the MIX buses / MATRIX buses.

### ② TO MIX/TO MATRIX buttons

These buttons select the send destination that is controlled by the TO MIX/TO MATRIX field. If the TO MATRIX button is on, you can control the signal sent to the MATRIX bus.

### ③ TO MATRIX SEND LEVEL knob

Adjusts the send level of the signal sent from the input channel to MATRIX bus. To adjust the send levels, use the encoders of the SELECTED CHANNEL section.

If the send-destination MATRIX bus is set to stereo, the left knob of the two adjacent knobs will operate as a PAN knob (for a ST IN channel, the BALANCE knob).

④ **TO MATRIX SEND ON/OFF button**

This is an on/off switch for the signal sent from the input channel to MATRIX bus.

An indication of "PRE" in black characters on a white background is shown above these buttons only if PRE (pre-fader) is selected as the position from which the signal is sent from the input channel. This indication is not shown for POST (post-fader). (For details on how to switch between PRE and POST → p. 87).

**4 In the TO MIX/TO MATRIX field in the screen, make sure that the TO MATRIX button is turned on.**

When the TO MATRIX button is on, the TO MIX/TO MATRIX field shows the knobs and buttons for MATRIX buses 1–8. If this button is off, press the button to turn it on.

If necessary, you can specify two adjacent odd-numbered/even-numbered MATRIX buses as a stereo bus and link the main parameters (→ p. 234).

If the send-destination MATRIX bus is assigned as stereo, the left knob of the two adjacent TO MATRIX SEND LEVEL knobs will operate as the TO MATRIX PAN knob (for a ST IN channel, it will operate as the TO MATRIX BALANCE knob).

For an INPUT channel, the right knob will adjust the common send level to the two MATRIX buses, and the left knob will adjust the panning between the two MATRIX buses. Turning the left TO MATRIX SEND LEVEL knob toward the left will increase the amount of signal sent to the odd-numbered MATRIX bus, and turning it toward the right will increase the amount sent to the even-numbered MATRIX bus.

For a ST IN channel, the right knob adjusts the common send level for the two MATRIX buses, and the left knob adjusts the volume balance of the left and right signals sent to the two MATRIX buses. Turning the left TO MATRIX SEND LEVEL knob toward the left will increase the amount of signal sent from the L-channel to the odd-numbered MATRIX bus, and turning it toward the right will increase the amount sent from the R-channel to the even-numbered MATRIX bus.

HINT

- *If necessary, the TO MATRIX PAN/TO MATRIX BALANCE knob setting can be linked with operations of the TO ST PAN/TO ST BALANCE knob shown in the STEREO/MONO field of the OVERVIEW screen (→ p. 234).*

**5 Make sure that the TO MATRIX SEND ON/OFF button is turned on for the send-destination MATRIX bus.**

If this button is off, press the button in the screen to turn it on.

**6 In the SELECTED CHANNEL section, use the MATRIX SEND LEVEL knobs to adjust the send levels to the MATRIX buses.**

HINT

- *If you want to monitor the signal being sent to a specific MATRIX bus, use the navigation keys to access the corresponding MATRIX channel, and press the appropriate [CUE] key in the Centralogic section.*

**7 You can use the top panel [SEL] keys to switch input channels and control the send level to the MATRIX buses in the same way.**

## Using the Centralogic section

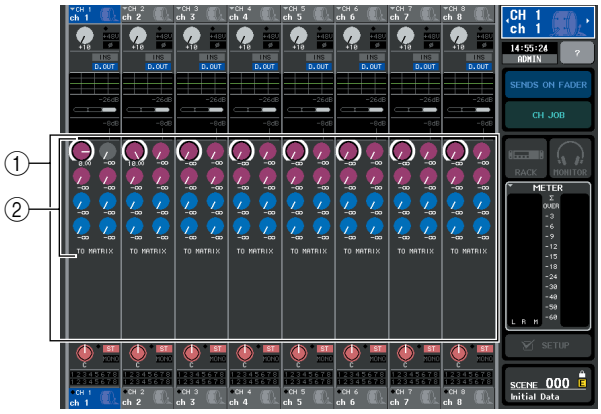
Here's how you can use the multifunction encoders of the Centralogic section to adjust the send level of the signals sent from eight consecutive input channels to a specific MATRIX bus.

### 1 Make sure that an output port is assigned to each MATRIX bus to which you want to send signals, and that your monitor system or external effect etc. is connected to the corresponding output port.

For details on assigning an output port to a MATRIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

### 2 Use the navigation keys to access the OVERVIEW screen that includes the input channel you want to control.

In the OVERVIEW screen, you can use the TO MIX/TO MATRIX field to adjust the send levels to the MIX/MATRIX bus.




#### ① TO MIX/TO MATRIX field

In this field you can switch the on/off status and adjust the level of the signal sent from the input channel to the MIX buses / MATRIX buses. Use the TO MIX/TO MATRIX buttons of the SELECTED CHANNEL VIEW screen to switch the type of send destination shown in this field (→ p. 92).

#### ② TO MATRIX SEND LEVEL knob

This screen shows the send level of the signal sent from the input channels to the MATRIX bus.

To adjust the send level, press the appropriate knob to select it, and operate multifunction encoders 1–8. If the send-destination MATRIX bus is set to stereo, the left one of the two adjacent knobs will be linked as the TO MATRIX PAN knob.

### 3 Press the TO MATRIX SEND LEVEL knob for the desired send-destination MATRIX bus.

A bold frame will appear around all TO MATRIX SEND LEVEL knobs for that MATRIX bus.

### 4 Use multifunction encoders 1–8 to adjust the send level of the signals sent from the up to eight input channels to the selected MATRIX bus.

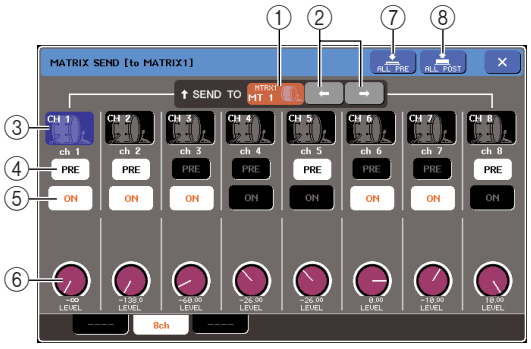
If necessary, you can use the navigation keys to switch the input channels that are assigned to the Centralogic section, and adjust the send levels from other input channels to the selected MATRIX bus.

HINT

- *If you want to monitor the signal being sent to a specific MATRIX bus, use the navigation keys to access the corresponding MATRIX channel in the Centralogic section, and press the [CUE] key for that MATRIX channel.*

### 5 If you want to make detailed settings for MATRIX sends, press the TO MATRIX SEND LEVEL knob inside the bold frame once again.

When you press the currently selected TO MATRIX SEND LEVEL knob once again, the MATRIX SEND popup window will appear. The window includes the following items.




#### ① SEND TO

This indicates the number, channel name, and icon of the MATRIX bus that is currently selected as the send-destination for signals.

#### ② ←/→ buttons

Use these buttons to switch between send-destination buses. You can switch consecutively through MIX buses 1–16 and MATRIX buses 1–8.

#### ③ Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

④ **PRE button**
This button selects the location from which the signal of the input channel will be sent to the MATRIX bus. The signal will be sent from POST (Immediately after the [ON] key) if this button is off. The signal will be sent from the PRE EQ (Immediately before the attenuator) or PRE FADER (Immediately before the fader) as specified in the BUS SETUP popup window if this button is on.

⑤ **TO MATRIX SEND ON/OFF button**
These are on/off switches for the signal sent from the input channels to the MATRIX bus.

⑥ **TO MATRIX SEND LEVEL knob**
This screen shows the send level of the signal sent from the input channels to the MATRIX bus. To adjust the level, operate multifunction encoders 1–8.

If the send-destination MATRIX bus is set to stereo, the TO MATRIX PAN knob (for a ST IN channel, the TO MATRIX BALANCE knob) and TO MATRIX SEND LEVEL knob are shown in this location.

⑦ **ALL PRE button**
This button selects PRE as the position from which signals are sent from all input channels to MATRIX buses.

⑧ **ALL POST button**
This button selects POST as the position from which signals are sent from all input channels to MATRIX buses.

**6 Use the TO MATRIX SEND ON/OFF buttons to switch the signals sent from the input channels to the currently selected MATRIX bus on/off.**

**7 If necessary, use the PRE buttons to select the location of the signal that is sent from each input channel to a MATRIX bus.**

**8 Repeat steps 3–6 to adjust the send level for other MATRIX buses in the same way.**

## Using the faders (SENDS ON FADER mode)

Here's how you can use the faders on the top panel to adjust the signal that is sent from all input channels to a specific MATRIX bus.

**1 Make sure that an output port is assigned to each MATRIX bus to which you want to send signals, and that your monitor system or external effect etc. is connected to the corresponding output port.**

For details on assigning an output port to a MATRIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

**2 In the function access area, press the SENDS ON FADER button.**

The M7CL will switch to SENDS ON FADER mode.

The most recently selected group of MIX/MATRIX buses will be assigned to the Centralogic section. The faders in the INPUT section and ST IN section will move to reflect the send level of the signals that are routed from each channel to the currently-selected MIX/MATRIX buses.

In SENDS ON FADER mode, the function access area in the display will show the button that enable you to switch between MIX ON FADER mode and MATRIX ON FADER mode, and the buttons that enable you to select the destination MIX/MATRIX buses.

① **MIX/MTRX ON FADER switch button**
Pressing this button repeatedly will toggle between MIX ON FADER mode and MATRIX ON FADER mode.

② **MIX/MATRIX bus selection buttons**
These buttons enable you to select the destination MIX/MATRIX buses. Only one button will appear if two buses are paired as stereo.

**3 Press the MIX/MTRX ON FADER switch button to select MATRIX ON FADER mode.**

In this way, you can use the MIX/MATRIX bus selection buttons to specify the destination MATRIX buses.

**4 Use the MATRIX bus selection buttons in the function access area to select the send-destination MATRIX bus.**

Alternatively, press a SEND LEVEL knob in the SELECTED CHANNEL section to display a popup window, from which you can select a MATRIX bus.

HINT

- *Alternatively, press a SEND LEVEL knob in the SELECTED CHANNEL section to display a popup window, from which you can select a MIX bus.*
- *You can also select a MATRIX bus by using the navigation keys and the [SEL] keys in the Centralogic section. If the MIX buses or MATRIX buses are selected when you press the [SEL] keys, the setting of the MIX/MTRX ON FADER switch button will be changed automatically.*
- *If you press the currently-selected MATRIX bus select button, cue monitoring will be turned on for the related MATRIX channel. This method is convenient if you want to monitor the signal that is being sent to the selected MATRIX bus.*

**5 Use the faders in the INPUT or ST IN section on the top panel to adjust the send level of the signals routed from the input channels to the selected MATRIX bus.**

HINT

- *You can assign the SENDS ON FADER function to a user-defined key. This lets you quickly switch to SENDS ON FADER mode for a specific MATRIX bus, and quickly switch back again.*

**6 Repeat steps 4–5 to adjust the send level for other MATRIX buses in the same way.**

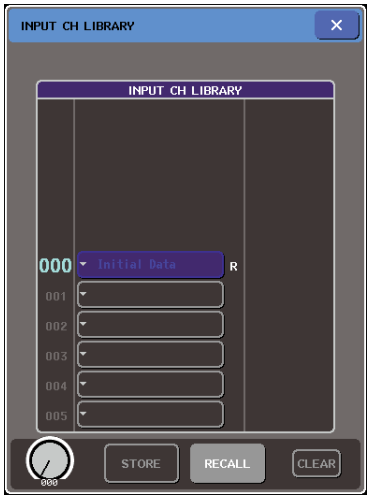
**7 When you're finished adjusting the MATRIX send levels, press the "×" symbol in the function access area.**

The function access area display will return to its prior state, and the M7CL will exit SENDS ON FADER mode and return to normal mode.

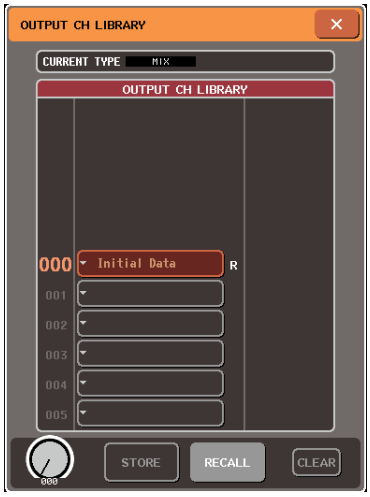
# Channel library operations

Channel libraries include “INPUT CHANNEL LIBRARY” which enables you to store and recall various parameters (including the HA settings) for input channels, and “OUTPUT CHANNEL LIBRARY” which enables you to store and recall various parameters for output channels.

**[INPUT CHANNEL LIBRARY]**




**[OUTPUT CHANNEL LIBRARY]**




To recall each library, press the corresponding LIBERARY button in the SELECTED CHANNEL VIEW screen. For details on using the library, refer to “Using libraries” (→ p. 35).

HINT

- *You can recall 200 different settings each from the input channel library and from the output channel library. Each library includes one read-only preset.*
- *The input channel library also stores the HA settings. If the library stores the [+48V] parameter set to on, the [+48V] indicator will light.*

# ◆ Chapter 6 ◆
# Output channel operations

This chapter explains operations for output channels (MIX channels, MATRIX channels, STEREO channel, MONO channel).

## Signal flow for output channels

The output channel section takes the signals sent from the input channels to the various buses, processes them with EQ and dynamics, and sends them to output ports or other buses. The following types of output channel are provided.

### ■ MIX channels

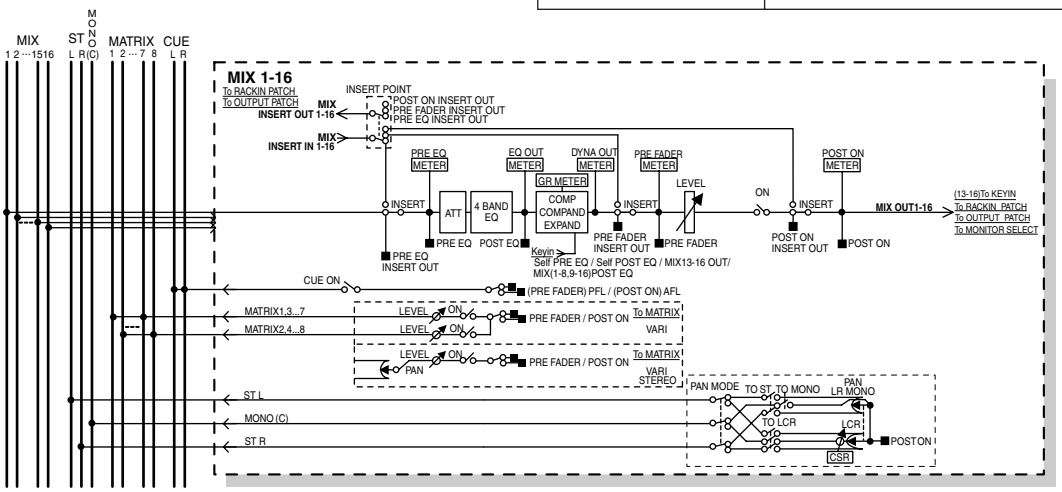
These channels process the signals sent from input channels to MIX buses, and output them to the corresponding output port, MATRIX bus, STEREO bus, or MONO (C) bus. When the M7CL is in the default state, the following output ports are assigned.

**• M7CL-32/48**

| | |
|---|---|
| **MIX channels 1–12** | OMNI OUT jacks 1–12 |
| **MIX channels 13–16** | Rack 5–8 |
| **MIX channels 1–8** | Slot 1 output channels 1–8, 9–16 |
| **MIX channels 9–16** | Slot 2 output channels 1–8, 9–16 |

**• M7CL-48ES (Daisy Chain)**

| | |
|---|---|
| **MIX channels 1–6** | EtherSound output channels 1–6 |
| **MIX channels 7–12** | EtherSound output channels 9–14 |
| **MIX channels 13–16** | RACK 5–8 |
| **MIX channels 1–8** | Slot 1 output channels 1–8, 9–16 |
| **MIX channels 9–16** | Slot 2 output channels 1–8, 9–16 |




### ■ STEREO channel / MONO (C) channel

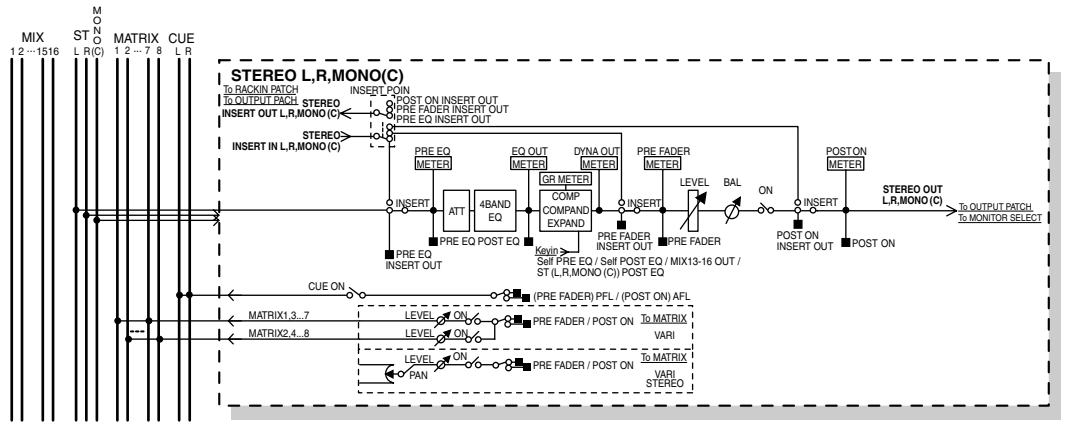
Each of these channels process the signal sent from the input channels to the STEREO bus or MONO (C) bus, and send it to the corresponding output port or MATRIX bus. If input channels are in LCR mode, the STEREO (L/R) channels and the MONO (C) channel can be used together as a set of three output channels. When the M7CL is in the default state, the following output ports are assigned.

**• M7CL-32/48**

| | |
|---|---|
| **STEREO channel (L/R)** | OMNI OUT jacks 15/16,<br>2TR OUT DIGITAL jack (L/R) |

**• M7CL-48ES (Daisy Chain)**

| | |
|---|---|
| **STEREO channel (L/R)** | EtherSound output channels 7/8, 15/16, 23/24,<br>OMNI OUT jacks 7/8,<br>2TR OUT DIGITAL jack (L/R) |




## ■ MATRIX channels

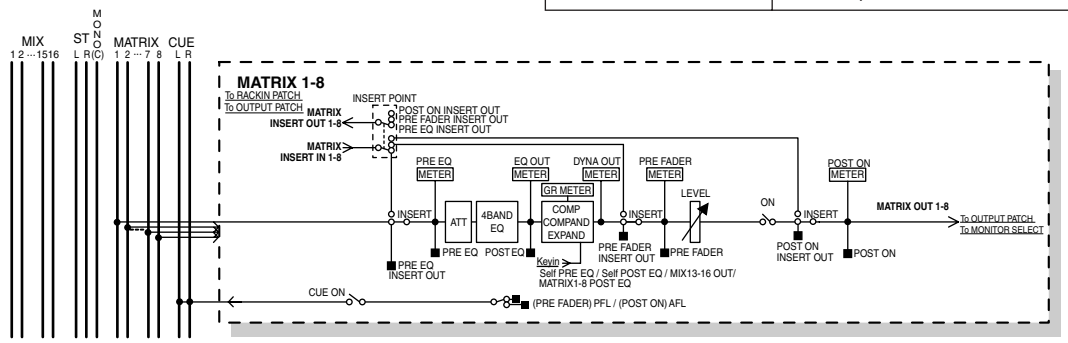
These channels process the signals sent from MIX channels and STEREO/MONO channels to MATRIX buses, and send them to the corresponding output ports. When the M7CL is in the default state, the following output ports are assigned.

**• M7CL-32/48**

| | |
|---|---|
| **MATRIX channels 1–8** | Slot 3 output channels 1–8, 9–16 |
| **MATRIX channels 1/2** | OMNI OUT jacks 13/14 |

**• M7CL-48ES (Daisy Chain)**

| | |
|---|---|
| **MATRIX channels 1–6** | EtherSound output channels 17–22 |
| **MATRIX channels 1–4** | OMNI OUT jacks 1–4 |
| **MATRIX channels 1–8** | Slot 3 output channels 1–8, 9–16 |




● **ATT (Attenuator)**
Attenuates/boosts the level of the signal.

● **4 BAND EQ (4 band equalizer)**
A parametric EQ with four bands; HIGH, HIGH MID, LOW MID, and LOW.

● **DYNAMICS 1**
This is a dynamics processor that can be used as a compressor, compander, or expander.

● **LEVEL**
This adjusts the output level of the channel.

● **BALANCE (STEREO channel only)**
Adjusts the left/right volume balance of the STEREO (L/R) channel.

● **ON (On/off)**
Turns the output channel on/off. If off, that channel is muted.

● **MATRIX ON/OFF (MATRIX send on/off)**
This is an on/off switch for the signal sent from the MIX channels, STEREO (L/R) channel, or MONO (C) channel to each MATRIX bus.

● **MATRIX (MATRIX send levels)**
This adjusts the send level of the signal sent from the MIX channels, STEREO (L/R) channel, or MONO (C) channel to each MATRIX bus. As the position from which the signal is sent to the MATRIX bus, you can choose either, immediately before the fader, or immediately after the [ON] key.

If the send-destination MATRIX bus is set to stereo, you can use the PAN knob to adjust the panning between the two MATRIX buses. If the send-source is a stereo MIX channel or the STEREO channel, use the BALANCE knob to adjust the volume balance of the left and right channels sent to the two MATRIX buses.

● **INSERT**
You can patch the desired output/input ports to insert an external device such as an effect processor. You can switch the insert-out and insert-in locations.

● **METER**
This meters the level of the output channel. You can switch the position at which the level is detected.

● **KEY IN (MIX channels 13–16 only)**
You can send the output signals of MIX channels 13–16 to dynamics processors and use them as key-in signals to control the dynamics.

● **RACK IN PATCH**
This patches the output signal of the output channel to an input of the rack.

● **OUTPUT PATCH**
This assigns an output port to an output channel.

● **MONITOR SELECT**
This selects the output signal of an output channel as a monitor source.

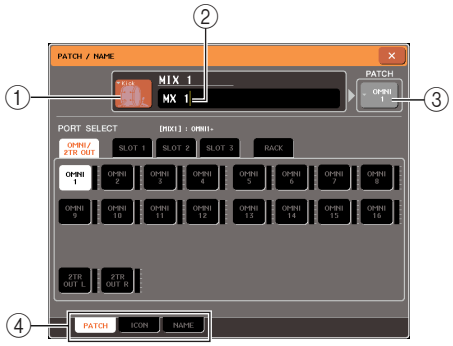
# Specifying the channel name and icon

This section explains how to specify the name and icon that will be displayed in the screen for each output channel.

## 1 Use the navigation keys to access the OVERVIEW screen that includes the output channel whose channel name and icon you want to specify.

① **Channel number / Channel name field**

## 2 Access the PATCH/NAME popup window by pressing the channel number / channel name field of the channel whose channel name / icon you want to assign.




The popup window includes the following items.

### ① Icon button

This indicates the icon selected for that channel. When you press this button, a screen will appear in which you can select an icon or sample name.

### ② Channel name input box

This indicates the name assigned to that channel. When you press this field, a keyboard window allowing you to assign a name will appear.

### ③ Output port button

This indicates the currently selected output port. If you press this button when selecting an icon or changing the channel name, you will return to the output port select screen.

### ④ Tabs

These tabs select the items shown in the lower part of the screen.

## 3 To select the icon for the channel, press the icon button.

The lower part of the popup window will change as follows.

### ① Icon select buttons

These buttons select the icon used for this channel.

### ② Sample name select buttons

These buttons select a sample name associated with the currently selected icon. When you press a button, that sample name will be input to the channel name field.

## 4 Use the icon select buttons to select the icon you want to use for that channel.

The selected icon is shown in the icon button in the upper part of the window.

## 5 If necessary, use the sample name select buttons to select a sample name.

The sample name you selected will be input to the channel name field in the upper part of the window.

HINT

- *You can add or edit characters in the channel name field even after you've entered the sample name. If you want to assign consecutively numbered channel names such as "Chorus 1" and "Chorus 2," this can be easily done by entering the sample name and then adding a number.*

**6 If you want to enter a channel name directly (or edit the sample name that was entered), press the channel name field in the upper part of the window.**

The keyboard window will appear in the lower part of the window, allowing you to enter or edit the characters. For details on how to use the keyboard window, refer to p. 34.

**7 Use the [SEL] keys of the Centralogic section to switch output channels, and specify the icon or channel name for other channels in the same way.**

When the PATCH / NAME popup window is shown, you can use the [SEL] keys of the Centralogic section to switch channels within the currently selected eight channels.

If you want to operate output channels other than those in the currently selected eight channels, use the navigation keys → Centralogic section [SEL] keys to select the desired channel.

**8 When you're finished with your input, press the "×" symbol in the upper right of the window.**

# Sending signals from MIX channels to the STEREO/MONO bus

This section explains how to send the signal of a MIX channel to the STEREO bus or MONO bus.
There are two ways to send signals from a MIX channel to the STEREO bus or MONO bus; ST/MONO mode and LCR mode. You can select the mode individually for each channel. These modes differ in the following ways.

## ■ ST/MONO mode

This mode sends the signal from the MIX channel to the STEREO bus and to the MONO bus independently.

- The signal sent from the MIX channel to the STEREO bus and to the MONO bus can be switched on/off individually.
- The panning of the signal sent from a monaural MIX channel to the STEREO bus L/R is controlled by the TO ST PAN knob. (The signal sent to the MONO bus is not affected by this knob.)
- The left/right volume balance of the signal sent from a stereo MIX channel to the STEREO bus is controlled by the BALANCE knob. (The signal sent to the MONO bus is not affected by this knob.)

## ■ LCR mode

This mode sends the signal of the MIX channel to a total of three buses (STEREO (L/R) and MONO (C)) together.

- The signal sent from the MIX channel to the STEREO (L/R) bus and MONO (C) bus will be switched on/off as a whole.
- The CSR (Center Side Ratio) knob specifies the level ratio between the signal sent from the MIX channel to the STEREO (L/R) bus and to the MONO (C) bus.
- The TO ST PAN knob / BALANCE knob specifies the level of the signal sent from the MIX channel to the STEREO (L/R) bus and MONO (C) bus.

HINT

*• If you want to monitor the signal of the STEREO bus or MONO bus through headphones etc., you should press the MONITOR button in the function access area to select "LCR" as the monitor source before you continue with the following procedure (→ p. 154).*

**1 Use the navigation keys to access the OVERVIEW screen that includes the MIX channel you want to send to the STEREO/MONO bus.**

① **STEREO/MONO field**

**2 In the STEREO/MONO field, press a knob to select the MIX channel you want to adjust, and then press the knob once again to access the TO STEREO/MONO popup window.**

In the TO STEREO/MONO popup window you can control the signal that is sent from the MIX channel to the STEREO/MONO bus. You can view this popup window as two types, 8ch and ALL; use the tabs below the window to switch between them. These windows include the following items.

### [TO STEREO/MONO popup window (8 ch)]

Here you can control the on/off and pan/balance settings of the signal sent from MIX channels to the STEREO (L/R) bus and MONO (C) bus, in groups of eight channels.

#### ① Channel select button

This shows the icon, channel number, and channel name for the channel. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key of the Centralogic section will light.

#### ② MODE button

This button selects either ST/MONO mode or LCR mode as the way in which the signal will be sent to the STEREO bus or MONO bus. This mode can be specified individually for each channel.

The two modes will alternate each time you press the button. An indicator (ST/MONO or LCR) immediately above the button will light to indicate the currently selected mode.

#### ③ STEREO/MONO buttons

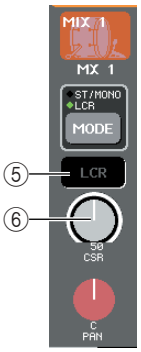
These buttons are individual on/off switches for the signal that is sent from each channel to the STEREO bus / MONO bus when the MONO button is set to ST/MONO mode.

#### ④ TO ST PAN/BALANCE knob

For monaural MIX channels, this acts as the PAN knob that adjusts the left/right panning of the signal sent to the STEREO bus.

For stereo MIX channels, this acts as the BALANCE knob that adjusts the volume. To adjust the value, press the knob to select it, and operate the corresponding multifunction encoder.

If the MODE button is set to LCR mode, the following button and knob are displayed instead of the STEREO/MONO button (③).




#### ⑤ LCR button

This button is an overall on/off switch for the signals sent from the MIX channel to the STEREO (L/R) bus and MONO (C) bus. If this button is off, no signals will be sent from the corresponding MIX channel to the STEREO bus or MONO bus.

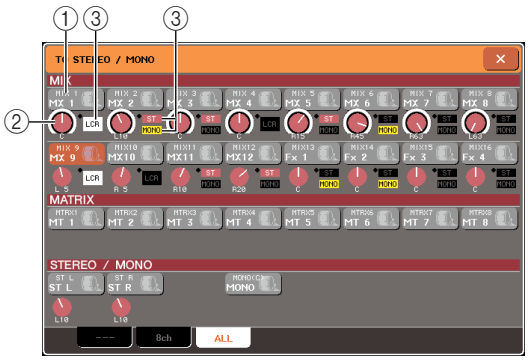
#### ⑥ CSR (Center Side Ratio) knob

This knob adjusts the relative level of the signals sent from the channel to the STEREO (L/R) bus and to the MONO (C) bus, in a range of 0–100%. To adjust the value, press the knob to select it, and operate the corresponding multifunction encoder.

### [TO STEREO/MONO popup window (ALL)]

This shows the status of the signals sent from all MIX channels to the STEREO bus / MONO bus, and adjusts the pan or balance for the eight selected channels.

For MATRIX channels and STEREO/MONO channels, only the channel number, icon, and channel name are shown.



**① Channel select button**

This indicates the channel number, the icon selected for that channel, and the channel name. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

**② TO ST PAN/BALANCE knob**

For monaural MIX channels, this acts as the PAN knob that adjusts the left/right panning of the signal sent to the STEREO bus. For stereo MIX channels, this acts as the BALANCE knob that adjusts the volume.

To adjust the value, press the knob to select it, and operate the corresponding multifunction encoder.

If the signal reaches the overload point at any meter detection point in that channel, the indicator at the right of the knob will light.

**③ ST/MONO indicator**

If a MIX channel is set to ST/MONO mode, this individually indicates the on/off status of the signal sent from the channel to the STEREO bus / MONO bus.

If a channel is set to LCR mode, the LCR indicator is displayed in this location. The LCR indicator indicates the on/off status of all signals sent from that channel to the STEREO bus and MONO bus.

**3 Access the eight-channel TO STEREO/MONO popup window.**

**4 Use the MODE button to select either ST/MONO mode or LCR mode for each channel.**

**5 In the STEREO / MONO MASTER section of the top panel, make sure that the [ON] key of the STEREO channel / MONO channel is turned on, and raise the fader to an appropriate position.**

**6 Press the [MIX 1-8] key or [MIX 9-16] key so that the MIX channels you want to control are recalled to the Centralogic section.**

**7 Make sure that the [ON] key of that channel is on, and use the fader in the Centralogic section to raise the master level of the MIX channel to an appropriate position.**

The subsequent steps will differ depending on whether ST/MONO mode or LCR mode was selected for the channel in step 5.

### ● Channels for which ST/MONO mode is selected

**8 In the TO STEREO/MONO popup window, use the STEREO/MONO button to turn the signal sent from the MIX channel to the STEREO bus / MONO bus on or off.**

For a channel that is set to ST/MONO mode, the signals sent to the STEREO bus and to the MONO bus can be switched on/off individually.

**9 In the TO STEREO/MONO popup window, press the TO ST PAN knob to select it, and use multifunction encoders 1–8 to adjust the pan of the signal sent from the MIX channels to the STEREO bus.**

### ● Channels for which LCR mode is selected

**8 Make sure that the LCR button is turned on in the TO STEREO/MONO popup window.**

Channels for which the LCR button is off will not send any signal to the STEREO bus or MONO bus.

**9 In the TO STEREO/MONO popup window, press the CSR knob to select it, and use multifunction encoders 1–8 to adjust the level difference between the signals sent from that channel to the STEREO (L/R) bus and to the MONO (C) bus.**

The CSR knob settings are the same as for input channels. (For details, refer to → p. 65)

**10 In the TO STEREO/MONO popup window, press the TO ST PAN knob to select it, and use multifunction encoders 1–8 to adjust the panning of the signals sent from the MIX channel to the STEREO (L/R) bus and the balance of the signals sent to the MONO (C) bus and STEREO (L/R) bus.**

Refer to page 65 for details on how the signal level sent from an LCR mode MIX channel to each bus will change according to the operation of the TO ST PAN knob.

# Sending signals from MIX channels and STEREO/MONO channels to MATRIX buses

This section explains how to send the signal from a MIX or STEREO/MONO channel to MATRIX buses 1–8. You can do this in either of the following two ways.

## ■ Using the SELECTED CHANNEL section

In this method, you use the encoders of the SELECTED CHANNEL section to adjust the send levels to the MATRIX buses. This method allows you to simultaneously control the signals sent from a specific MIX, STEREO (L/R), or MONO (C) channel to all MATRIX buses.

## ■ Using the Centralogic section

In this method, you use the multifunction encoders of the Centralogic section to adjust the send levels to the MATRIX buses. This method allows you to simultaneously control the signals sent from up to eight MIX, STEREO (L/R), or MONO (C) channels to a specific MATRIX bus.



## Using the SELECTED CHANNEL section

Use the encoders of the SELECTED CHANNEL section to adjust the send level of the signals sent from the desired MIX, STEREO (L/R) or MONO (C) channel to all MATRIX buses.

**1 Make sure that an output port is assigned to the MATRIX bus to which you want to send signals, and that an external device is connected.**

For details on assigning an output port to a MATRIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

**2 Using the navigation keys, assign the desired MIX channels 1–8 or 9–16 or the STEREO/MONO channels to the Centralogic section.**

**3 Use the [SEL] keys of the Centralogic section to select the input channel that will send signals to the MATRIX buses.**

The STEREO/MONO channels can also be selected directly by using the [SEL] keys of the STEREO/MONO MASTER section.

**4 Press any one of the encoders of the SELECTED CHANNEL section to access the SELECTED CHANNEL VIEW screen.**

The SELECTED CHANNEL VIEW screen will show all the mix parameters of the corresponding channel. Adjustments of send levels to the MATRIX buses is done in the TO MATRIX field of this screen.

### ① TO MATRIX field

In this field you can switch the on/off status and adjust the level of the signal sent from that channel to the MATRIX buses.

### ② TO MATRIX SEND LEVEL knob

This adjusts the send level of the signal sent from that channel to the MATRIX buses. To adjust the send levels, use the encoders of the SELECTED CHANNEL section.

If the send-destination MATRIX bus is set to stereo, the left knob of the two adjacent knobs will operate as a PAN knob (for the STEREO channel or a stereo MIX channel, the BALANCE knob). If the TO MATRIX SEND ON/OFF button (③) is off, the knob will be dimmed.

### ③ TO MATRIX SEND ON/OFF button

Functions as an on/off switch for the signal sent from that channel to the MATRIX bus.

An indication of "PRE" in black characters on a white background is shown above these buttons only if the signal send position is PRE (pre-fader). This indication is not shown for POST (post-fader). (For details on how to switch between PRE and POST → p. 87).

HINT

- *If PRE is selected as the position from which the signal is sent to a MATRIX bus, the signal will be sent from the pre-fader position regardless of the setting in the BUS SETUP screen.*

**5 Make sure that the TO MATRIX SEND ON/OFF button is turned on for the send-destination MATRIX bus.**

If this button is off, press the button in the screen to turn it on.

**6 In the SELECTED CHANNEL section, use the MIX/MATRIX SEND LEVEL knobs to adjust the send levels to the MATRIX buses.**

HINT

*• If you want to monitor the signal being sent to a specific MATRIX bus, use the navigation keys to access the corresponding MATRIX channel, and press the appropriate [CUE] key in the Centralogic section.*

**7 Use the navigation keys and the [SEL] keys of the Centralogic section to switch channels, and adjust the send level from other channels to the MATRIX buses in the same way.**

## Using the Centralogic section

This method lets you use the multifunction encoders to simultaneously adjust the send levels from the eight channels selected in the Centralogic section to the desired MATRIX bus.

**1 Make sure that an output port is assigned to the MATRIX bus to which you want to send signals, and that your external device is connected to the corresponding output port.**

For details on assigning an output port to a MATRIX bus refer to p. 105. For details on connecting an external device, refer to p. 46.

**2 Use the navigation keys to access the OVERVIEW screen that includes the channel (MIX channels 1–8, 9–16, or STEREO/MONO channels) that you want to control.**

In the OVERVIEW screen, you can use the TO MATRIX field to adjust the send levels to the MATRIX bus.

**① TO MATRIX field**

This field specifies the send level of the signal sent from the MIX and STEREO/MONO channels to the MATRIX bus.

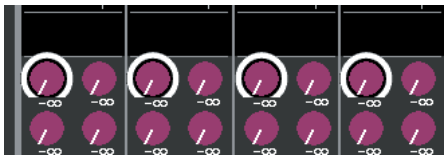
**② TO MATRIX SEND LEVEL knob**

This adjusts the send level of the signal sent from the MIX or STEREO/MONO channel to the MATRIX buses.

To adjust the send level, press the appropriate knob to select it, and operate multifunction encoders 1–8. If the send-destination MATRIX bus is set to stereo, the left knob of the two adjacent knobs will operate as a PAN knob (for stereo MIX channels or for the STEREO channel, the BALANCE knob).

**3 Press the TO MATRIX SEND LEVEL knob for the desired send-destination MATRIX bus.**

A bold frame will appear around all TO MATRIX SEND LEVEL knobs for that MATRIX bus.



**4 Use multifunction encoders 1–8 to adjust the send level of the signals sent from up to eight MIX channels or the STEREO/MONO channels to the selected MATRIX bus.**

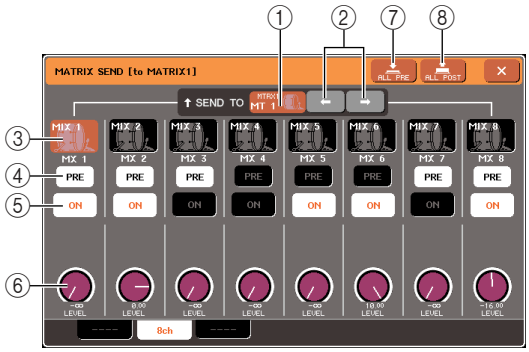
If necessary, you can use the navigation keys and the [SEL] keys of the Centralogic section to switch the send-destination channel.

HINT

- *If you want to monitor the signal being sent to a specific MATRIX bus, use the navigation keys to access the corresponding MATRIX channel in the Centralogic section, and press the [CUE] key for that MATRIX channel.*
- *If you press the currently-selected MATRIX bus select button again, cue monitoring will be turned on for the related MATRIX channel. This method is convenient if you want to monitor the signal that is being sent to the selected MATRIX bus.*

**5 If you want to make detailed settings for MATRIX sends, press the TO MATRIX SEND LEVEL knob inside the bold frame once again.**

When you press the currently selected TO MATRIX SEND LEVEL knob once again, the MATRIX SEND popup window will appear. The window includes the following items.




### ① SEND TO

This indicates the number, channel name, and icon of the MATRIX bus that is currently selected as the send-destination for signals.

### ② ←/→ buttons

Use these buttons to switch between send-destination MATRIX buses.

### ③ Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. When you press this button, that channel will be selected for operations, and the corresponding [SEL] key will light.

### ④ PRE button

This button selects the location from which the signal of the MIX or STEREO/MONO channel will be sent to the MATRIX bus. The signal is sent from the post-fader position when this button is off, and from the pre-fader position when this button is on.

### ⑤ TO MATRIX SEND ON/OFF button

This is an on/off switch for the signal sent from the MIX or STEREO/MONO channel to the MATRIX bus.

### ⑥ TO MATRIX SEND LEVEL knob

This adjusts the send level of the signal sent from the MIX or STEREO/MONO channel to the MATRIX bus. To adjust the level, operate multifunction encoders 1–8.

If the send-destination MATRIX bus is set to stereo, the TO MATRIX PAN knob (for a stereo MIX channel or the STEREO channel, the TO MATRIX BALANCE knob) and TO MATRIX SEND LEVEL knob are shown in this location.

### ⑦ ALL PRE button

This button sets PRE as the position from which the signal is sent from all channels to the MATRIX bus.

### ⑧ ALL POST button

This button sets POST as the position from which the signal is sent from all channels to the MATRIX bus.

**6 Use the TO MATRIX SEND ON/OFF buttons to switch the signals sent from the MIX and STEREO/MONO channels to the currently selected MATRIX bus on/off.**

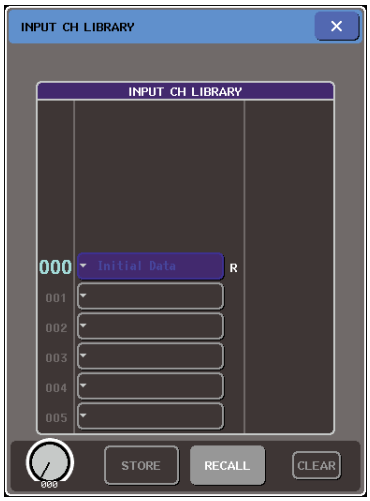
**7 If necessary, you can use the PRE button to select the location from which the signal is sent from each channel to the MATRIX bus.**

**8 Repeat steps 3–6 to adjust the send level for other MATRIX buses in the same way.**

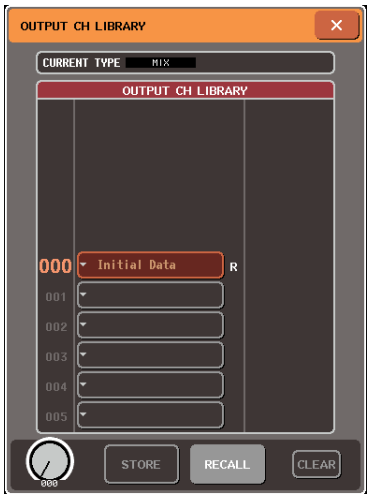
# Channel library operations

Channel libraries include “INPUT CHANNEL LIBRARY” which enables you to store and recall various parameters (including the HA settings) for input channels, and “OUTPUT CHANNEL LIBRARY” which enables you to store and recall various parameters for output channels.

**[INPUT CHANNEL LIBRARY]**




**[OUTPUT CHANNEL LIBRARY]**




To recall each library, press the corresponding LIBERARY button in the SELECTED CHANNEL VIEW screen. For details on using the library, refer to “Using libraries” (→ p. 35).

HINT

- *You can recall 200 different settings each from the input channel library and from the output channel library. Each library includes one read-only preset.*
- *The input channel library also stores the HA settings. If the library stores the [+48V] parameter set to on, the [+48V] indicator will light.*

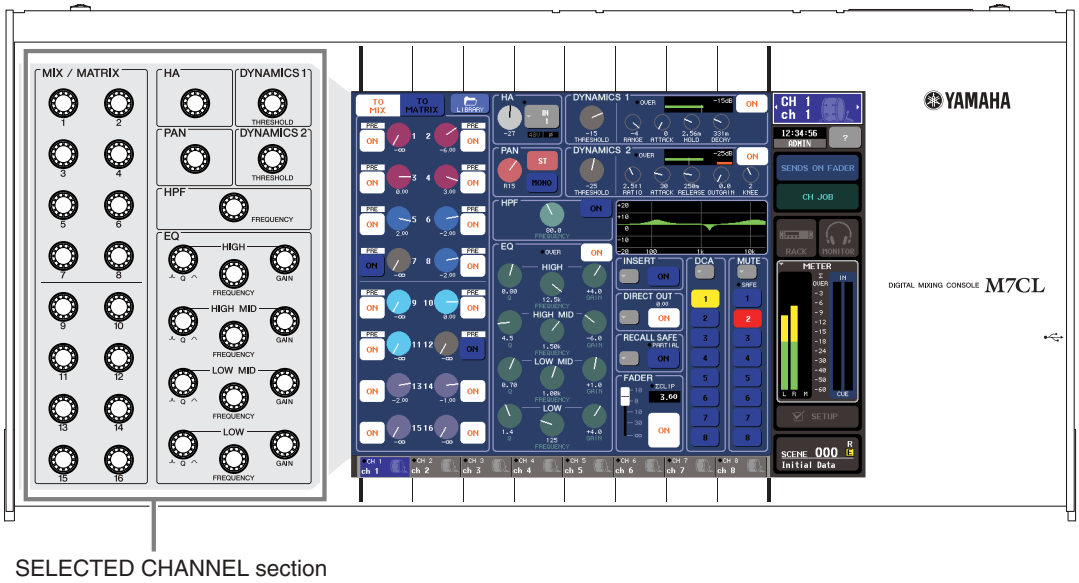
# ◆ Chapter 7 ◆

# Operations in the SELECTED CHANNEL section

This chapter explains how you can use the SELECTED CHANNEL section and the SELECTED CHANNEL VIEW screen to control the selected channel.

## About the SELECTED CHANNEL section

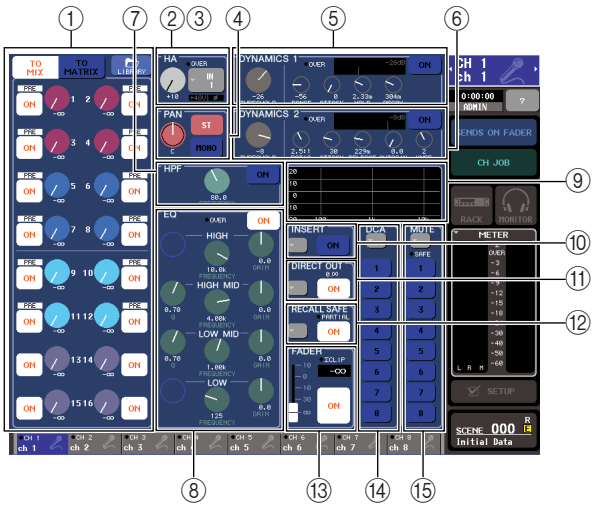
The SELECTED CHANNEL section located at the left of the display corresponds to a mixer module of a conventional analog mixer, and allows you to manually adjust all the major parameters of the currently selected channel.
Operations in this section will affect the channel that was most recently selected by its [SEL] key. For a ST IN channel or STEREO channel, either the L or the R channel is selected, and the major parameters are linked.
You can use the encoders on the panel to control mix parameters such as head amp gain, HPF/EQ settings, the threshold setting of the dynamics processors, pan/balance settings, and send levels to the MIX/MATRIX buses.




SELECTED CHANNEL section

# About the SELECTED CHANNEL VIEW screen

When you press one of the encoders in the SELECTED CHANNEL section, the SELECTED CHANNEL VIEW screen will appear in the touch screen. The SELECTED CHANNEL VIEW screen shows most of the parameters of the channel currently selected by its [SEL] key. This screen lets you check the settings being controlled by the encoders of the SELECTED CHANNEL section.
The SELECTED CHANNEL VIEW screen contains the following items.




### ① TO MIX/TO MATRIX field

- **When an input channel is selected**
  ..... Here you can switch the on/off status of the signals sent from that channel to each MIX bus and MATRIX bus, and view the send levels. By switching between the TO MIX and TO MATRIX buttons you can switch the buses that are shown in the SELECTED CHANNEL VIEW screen or OVERVIEW screen.
- **When a MIX, STEREO, or MONO channel is selected**
  ..... Here you can switch the on/off status of the signals sent from that channel to each MATRIX bus, and view the send levels.
- **When a MATRIX channel is selected**
  ..... Here you can switch the on/off status of the signals sent from each channel to that MATRIX bus, and view the send levels.

### ② HA field (input channels only)

This field shows the input port patched to the input channel, the head amp gain, the phantom power on/off status, the phase setting, and the input level OVER indicator.

### ③ PATCH field (output channels only)

For output channels, the PATCH field is shown in the (②) area. This field indicates the output port that is patched to the output channel. If two or more output ports are patched, only will be shown as a representative.

### ④ TO ST PAN/BALANCE field

- **When an INPUT channel or monaural MIX channel is selected**
  ..... This functions as an on/off switch for the signal sent from that channel to the STEREO/MONO bus. The panning of the signal sent to the STEREO bus is also shown.
- **When a ST IN channel or a stereo MIX channel is selected**
  ..... This functions as an on/off switch for the signal sent from that channel to the STEREO/MONO bus. This also shows the balance of the left/right signals sent from that channel to the STEREO bus.
- **When a stereo MATRIX channel is selected**
  ..... This shows the balance of the left/right signals sent from the MATRIX channel.
- **When a STEREO channel is selected**
  ..... This shows the balance of the left/right signals sent from the STEREO channel.

### ⑤ DYNAMICS 1 field

### ⑥ DYNAMICS 2 field (input channels only)

This shows the Dynamics 1/2 parameters. This also accesses a popup window where you can edit detailed dynamics parameters that cannot be edited in the SELECTED CHANNEL section.

### ⑦ HPF field (input channels only)

These controls switch the HPF (high-pass filter) on/off, and adjust its cutoff frequency.

### ⑧ EQ field

Here you can switch the four-band EQ on/off, and view its parameters.

### ⑨ EQ graph field
This shows the response of the EQ/HPF.

### ⑩ INSERT field (INPUT, MIX, MATRIX, STEREO, and MONO channels only)
The signal route for insertion in the channel can be switched on/off here.

### ⑪ DIRECT OUT field (INPUT channels only)
This is an on/off switch for the signal that is directly output from the channel. The output level is also shown here.

### ⑫ RECALL SAFE field
Switches the Recall Safe status on/off for that channel. If only some of the channel parameters are set to Recall Safe, the PARTIAL indicator will light.

### ⑬ FADER field
Here you can view the input/output level of the channel, and switch it on/off.

### ⑭ DCA field (input channels only)
Here you can select the DCA group to which that channel is assigned.

### ⑮ MUTE field
Here you can select the mute group to which that channel is assigned.

# Operations in the SELECTED CHANNEL section



This section explains how you can use the SELECTED CHANNEL section to control all of the parameters for a specific channel.

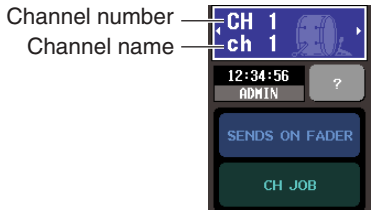
## 1 Use a [SEL] key to select the channel you want to control.

The SELECTED CHANNEL section controls the channel that was last selected by its [SEL] key.

To select an INPUT, ST IN, STEREO, or MONO channel, press the appropriate [SEL] key in the INPUT section, ST IN section, or STEREO/MONO MASTER section of the top panel.

To select a MIX or MATRIX channel, use the navigation keys to recall the desired channel to the Centralogic section, and then press the [SEL] key for the desired channel.

The number and name of the currently selected channel is shown in the channel select field located in the function access area of the touch screen.

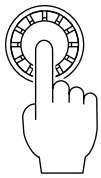



HINT

- *In the case of ST IN channels or STEREO channels, you can switch between L and R by repeatedly pressing the same [SEL] key.*
- *You can also switch channels by pressing the channel select field located in the function access area. Pressing the left side will select the preceding channel, and pressing the right side will select the next channel.*

## 2 Press any one of the knobs in the SELECTED CHANNEL section.

When you press a knob in the SELECTED CHANNEL section, the SELECTED CHANNEL VIEW screen for the currently selected channel will appear. If you leave this screen displayed, you will always be able to view the settings in the screen while operating an encoder of the SELECTED CHANNEL section.



HINT

- *In addition, you can make settings in the PREFERENCE screen so that you can access detailed parameters that cannot be edited in the SELECTED CHANNEL section. (For details, refer to p. 214).*

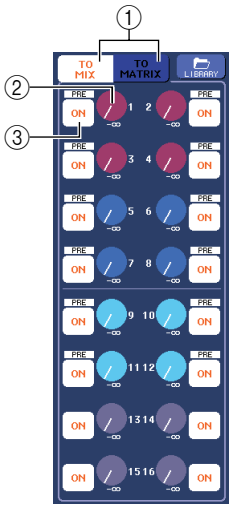
Even if a different screen is selected, the knobs of the SELECTED CHANNEL section always affect the currently selected channel. In this case, a window indicating the value of that parameter will appear in the screen when you operate a knob.

## 3 Use the encoders of the SELECTED CHANNEL section and the buttons in the SELECTED CHANNEL VIEW screen to edit the parameters of the selected channel.

Subsequent operations will differ depending on the parameters you want to adjust.

## ● Adjusting the send level to a MIX bus or MATRIX bus

Use the TO MIX/TO MATRIX field when you want to send the signal from an INPUT/ST IN channel to a MIX bus, or from an INPUT, ST IN, MIX, or STEREO channel to a MATRIX bus.




### ① TO MIX/TO MATRIX buttons (Input channels only)

These buttons select the buses that will be controlled. This field will show the MIX buses if the TO MIX button is on, or the MATRIX buses if the TO MATRIX button is on.

### ② TO MIX/TO MATRIX SEND LEVEL knobs

These knobs indicate the send level of the signal sent from that input channel to each MIX bus or MATRIX bus. To adjust the values, use the corresponding [MIX/MATRIX] encoder of the SELECTED CHANNEL section.

If the send-destination MIX bus / MATRIX bus is set to stereo, the left knob of the two adjacent knobs will operate as a PAN knob. (For a ST IN channel, a stereo MIX channel, or STEREO channel, it will operate as the BALANCE knob.) When you press this knob, the corresponding MIX/MATRIX SEND popup window will appear.

NOTE

- *If the send-destination MIX bus is a FIXED type, this knob will not appear; only the TO MIX SEND ON/OFF button (③) will be shown.*

### ③ TO MIX/TO MATRIX SEND ON/OFF button

These are on/off switches for the signal sent from the channel to each MIX bus / MATRIX bus.

To adjust the send level to MIX buses or MATRIX buses, first use the TO MIX / TO MATRIX buttons to select the buses to which you want to send the signal (only for input channels).

Next, use the corresponding [MIX/MATRIX] encoders of the SELECTED CHANNEL section (color-coded in the screen) to adjust the send levels of the signal sent to each bus.

If desired, you can use the TO MIX/TO MATRIX SEND ON/OFF buttons to switch the signal sent to each bus on/off. Above each of these buttons is shown the position from which the signal is sent from the current channel. (For details on changing the send position → p. 70).

## ● Adjusting the send level from the MIX channels to a specific MATRIX bus

To adjust the send level from the MIX channels to a specific MATRIX bus, first select the send-destination MATRIX channel, and then access the SELECTED CHANNEL VIEW screen. If you have selected a MATRIX channel, the FROM MIX field is shown at the left edge of the SELECTED CHANNEL VIEW screen. This field includes the following items.

### ① FROM MIX SEND LEVEL knobs

These adjust the send level of the signal sent from each MIX channel to the selected MATRIX bus.

### ② FROM MIX SEND ON/OFF buttons

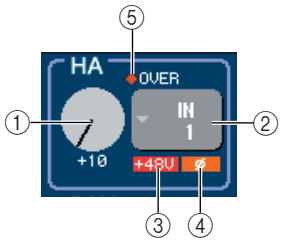
These are on/off switches for the signal sent from each MIX channel to the MATRIX bus.

To adjust the send level from a MIX bus, turn the corresponding [MIX/MATRIX] encoder in the SELECTED CHANNEL section (they are color-coded as in the screen).

If desired, you can use the FROM MIX SEND ON/OFF buttons to switch the signal sent from each MIX channel to the MATRIX bus on/off. Above each of these buttons is shown the position from which the signal is sent from the MIX channel. (For details on changing the send position → p. 87).

## ● Making HA settings (input channels only)

To control the head amp (HA) assigned to an INPUT/ST IN channel, you will use the [HA] encoder of the SELECTED CHANNEL section and the HA field of the SELECTED CHANNEL VIEW screen. The HA field includes the following items.




### ① GAIN knob

This indicates the gain of the head amp assigned to the channel. To adjust the value, use the [HA] encoder of the SELECTED CHANNEL section.

### ② INPUT PORT popup button

This shows the input port assigned to this channel. It also accesses a popup window in which you can select the input port.

### ③ +48V

This indicates the phantom power on (red) or off (black) status for the head amp assigned to the channel.

### ④ ø (Phase)

This indicates either normal phase (black) or reverse phase (orange) for the input assigned to the channel.

### ⑤ OVER indicator

This will light when the input signal from the HA reaches the overload point.

To adjust the head amp gain, use the [HA] encoder of the SELECTED CHANNEL section.
When you press the GAIN knob in the screen, the HA/PATCH popup window (1 ch) will appear, allowing you to make settings for the head amp. (For details on the popup window → p. 61). When you press the INPUT PORT button, the PATCH/NAME popup window will appear, allowing you to select the input port for each channel. (For details on the popup window → p. 108).

NOTE

*• The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*

## ● Setting the pan/balance

To adjust the pan/balance of the signal sent from that channel to the STEREO bus, use the [PAN] encoder of the SELECTED CHANNEL section and the TO ST PAN/BALANCE field of the SELECTED CHANNEL VIEW screen. The TO ST PAN/BALANCE field includes the following items.

### ① PAN/BALANCE knob

The following parameter will change, according to the channel that is selected.

| | |
|---|---|
| **INPUT channel** | TO STEREO PAN |
| **ST IN channel** | TO STEREO BALANCE |
| **MIX (MONO×2) channel** | TO STEREO PAN |
| **MIX (STEREO) channel** | MIX BALANCE |
| **MATRIX (MONO×2) channel** | Not displayed |
| **MATRIX (STEREO) channel** | MATRIX BALANCE |
| **STEREO channel** | STEREO BALANCE |
| **MONO channel** | Not displayed |

### ② ST/MONO button (INPUT, ST IN, and MIX channels only)

This switches the on/off status of the signal sent from that channel to the STEREO (L/R) bus and MONO (C) bus.

### ③ LCR button (INPUT, ST IN, MIX channels only)

If an INPUT, ST IN, or MIX channel is set to LCR mode, the LCR button is displayed in location (②). The LCR button is an overall on/off switch for the signals sent from the channel to the STEREO bus and MONO bus.

To adjust the pan/balance of each channel, use the ST/MONO button or LCR button to select the send-destination bus, and operate the [PAN] encoder of the SELECTED CHANNEL section.

## ● Changing the output patching (output channels only)

To change the output patching of an output channel in the SELECTED CHANNEL VIEW screen, use the popup button in the PATCH field.

When you press the popup button, the PATCH/NAME popup window will appear, allowing you to select the output port and specify the channel name and icon. (For details on the popup window → p. 108).

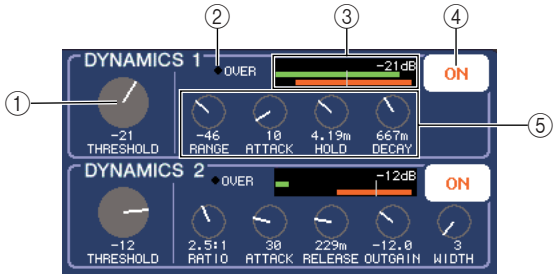
## ● Making dynamics settings

To edit the dynamics for the currently selected channel, use the DYNAMICS 1/DYNAMICS 2 field of the SELECTED CHANNEL VIEW screen or the [DYNAMICS 1]/[DYNAMICS 2] encoders of the SELECTED CHANNEL section.

NOTE

- *The DYNAMICS 2 field of the SELECTED CHANNEL VIEW screen and the [DYNAMICS 2] encoder of the SELECTED CHANNEL section are valid only if an input channel is selected.*

The DYNAMICS 1/DYNAMICS 2 field of the SELECTED CHANNEL VIEW screen contains the following items.




### ① THRESHOLD knob

This indicates the setting of the THRESHOLD parameter of a gate or compressor. To edit the setting, use the [DYNAMICS 1]/[DYNAMICS 2] encoders of the SELECTED CHANNEL section.

### ② OVER indicator

This will light if the output level of the dynamics reaches the overload point.

### ③ Level meter

This displays a bar graph indication of the signal level being input to the dynamics (on=green, off=gray) and the amount of gain reduction (orange). The THRESHOLD setting is shown numerically and as a vertical line.

### ④ DYNAMICS ON/OFF buttons

These buttons turn dynamics processors 1/2 on/off.

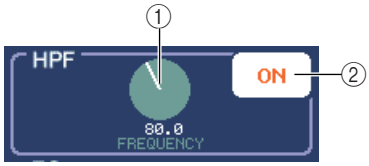
### ⑤ Parameter knobs

These knobs indicate the values of parameters other than THRESHOLD.

To edit the dynamics settings, switch the DYNAMICS ON/OFF button on, and use the [DYNAMICS 1]/[DYNAMICS 2] encoders of the SELECTED CHANNEL section to adjust the THRESHOLD parameter.
If you want to edit parameters other than THRESHOLD, or to recall existing data from the library, press any location within the field to access the DYNAMICS 1/DYNAMICS 2 popup window. (For details on the popup window → p. 118).

## ● Making HPF/EQ settings

To edit the HPF of the currently selected channel, use the HPF field of the SELECTED CHANNEL VIEW screen or the [HPF] encoder of the SELECTED CHANNEL section (input channels only).
The HPF field of the SELECTED CHANNEL VIEW screen contains the following items.




### ① FREQUENCY knob

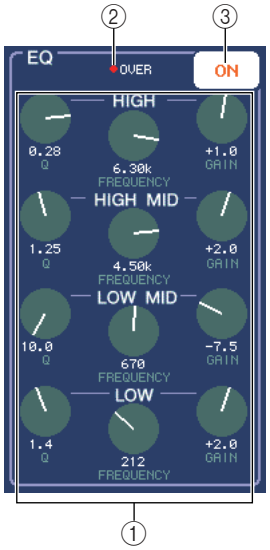
Indicates the cutoff frequency of the HPF.

### ② HPF ON/OFF button

Switches the HPF on/off.

To edit the HPF, turn the HPF ON/OFF on, and use the [HPF] encoder of the SELECTED CHANNEL section to adjust the cutoff frequency.

To edit the EQ of the currently selected channel, use the EQ field of the SELECTED CHANNEL VIEW function or the EQ [Q], EQ [FREQUENCY], and EQ [GAIN] encoders of the SELECTED CHANNEL section. The EQ field of the SELECTED CHANNEL VIEW screen contains the following items.




### ① Q/FREQUENCY/GAIN knobs

These knobs indicate the Q, FREQUENCY (center frequency), and GAIN (amount of boost/cut) for each band (LOW, LOW-MID, HIGH-MID, and HIGH).

② **OVER indicator**
This will light when the post-EQ signal reaches the overload point.

③ **EQ ON/OFF button**
Switches the EQ on/off.

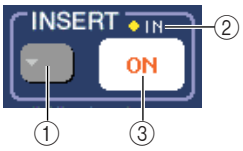
To edit the EQ, switch the EQ ON/OFF button on, and use the EQ [Q], EQ [FREQUENCY], and EQ [GAIN] knobs of the SELECTED CHANNEL section to adjust the cue, center frequency, and the amount of boost/cut.
If you want to edit more detailed parameters, or recall existing settings from the library, press any EQ or HPF knob or a location within the EQ graph field to access the EQ popup window. (For details on the popup window → p. 115).

NOTE

- *The type of the LOW band EQ or HIGH band EQ cannot be switched in the SELECTED CHANNEL VIEW screen. If necessary, you can access the EQ popup window and switch the EQ type.*
- *If the HIGH band EQ type is already set to Low Pass Filter, the HIGH band Q knob will not be displayed, and the GAIN knob will function as an on/off switch for the Low Pass Filter.*
- *Press the EQ [Q] and EQ [GAIN] encoders simultaneously to reset the GAIN setting for each band to the default value (0.0dB).*

## ● Making insert settings (INPUT, MIX, MATRIX, STEREO, and MONO channels only)

Use the INSERT field to make insert-related settings in the SELECTED CHANNEL VIEW screen. This field includes the following items.




① **INSERT popup button**
When you press this button, the INSERT/DIRECT OUT popup window will appear, allowing you to make settings for insert and direct output.

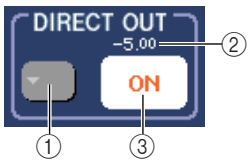
② **IN indicator**
This indicates the presence or absence of a signal at the input port patched to INSERT IN.

③ **INSERT ON/OFF button**
Switches the insert on/off.

To make insert settings in the SELECTED CHANNEL VIEW screen, press the INSERT popup button to access the INSERT/DIRECT OUT popup window (1 ch), and assign an output port and input port to the insert-out and insert-in (→ p. 112). When you've assigned the ports, press the INSERT ON/OFF button to turn it on.

## ● Making direct output settings (INPUT channels only)

Use the DIRECT OUT field to make direct-output related settings for an input channel in the SELECTED CHANNEL VIEW screen. This field includes the following items.




① **DIRECT OUT popup button**
When you press this button, the INSERT/DIRECT OUT popup window will appear, allowing you to make settings for insert and direct output.

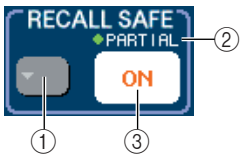
② **DIRECT OUT LEVEL indicator**
This indicates the currently specified DIRECT OUT LEVEL value.

③ **DIRECT OUT ON/OFF button**
Turns the direct output on/off.

To make direct out settings in the SELECTED CHANNEL VIEW screen, press the DIRECT OUT popup button to access the INSERT/DIRECT OUT popup window (1 ch), and assign an output port to the direct out (→ p. 112). Press the DIRECT OUT ON/OFF button to turn it on, and use the DIRECT OUT LEVEL knob to adjust the output level.

## ● Setting a channel to Recall Safe

Use the RECALL SAFE field to specify Recall Safe for the channel that is currently selected in the SELECTED CHANNEL VIEW screen. This field includes the following items.




① **RECALL SAFE popup button**
This opens the RECALL SAFE MODE popup window, where you can make settings related to Recall Safe.

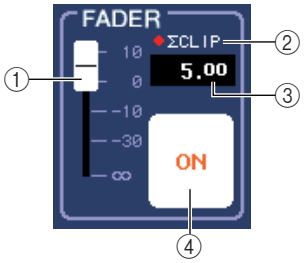
② **PARTIAL indicator**
This will light if only some of the parameters of that channel are set to Recall Safe.

③ **RECALL SAFE ON/OFF button**
Switches the Recall Safe status on/off for the channel.

To set the channel to Recall Safe mode, press the RECALL SAFE ON/OFF button to turn it on. If you want to specify Recall Safe only for specific parameters, press the RECALL SAFE popup window to open the RECALL SAFE MODE popup window, and then select the parameters for which you want to specify Recall Safe. (For details on the popup window → p. 148).

## ● Turning a channel on/off

Use the FADER field to switch the channel on/off in the SELECTED CHANNEL VIEW screen. This field includes the following items.




### ① FADER

This indicates the input/output level of the channel. This is linked with the fader on the top panel.

### ② Σ CLIP indicator

This indicator will light if an overload occurs at even one of the level detection points in that channel.

### ③ Input/output level

This indicates the current setting of fader.

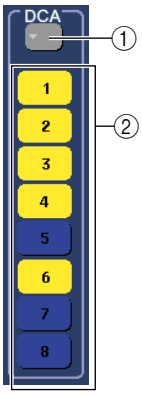
### ④ CH ON/OFF button

This button switches the channel on/off. This is linked with the [ON] button of the top panel.

When you press the CH ON/OFF button in the FADER field, that channel will be switched on/off and the top panel [ON] key will operate in tandem with this.

## ● Assigning a channel to a DCA group (input channels only)

Use the DCA field of the SELECTED CHANNEL VIEW screen to assign a channel to a DCA group. This field includes the following items.




### ① DCA popup button

This accesses the DCA/MUTE GROUP ASSIGN MODE popup window, where you can select the channels that will be assigned to each DCA group or mute group.

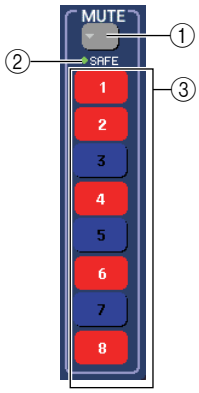
### ② DCA buttons 1–8

These buttons select the DCA group(s) to which this channel is assigned.

To assign the channel to a DCA group, turn on the desired DCA button 1–8 (multiple selections are allowed). To check the channels that are assigned to each DCA group, press the DCA popup button to open the DCA/MUTE GROUP ASSIGN MODE popup window. (For details on the popup window → p. 124).

## ● Assigning a channel to a mute group

Use the MUTE field of the SELECTED CHANNEL VIEW screen to assign a channel to a mute group. This field includes the following items.




### ① MUTE popup button

This accesses the DCA/MUTE GROUP ASSIGN MODE popup window, where you can select the channels that will be assigned to each DCA group or mute group.

### ② MUTE SAFE indicator

This will light if this channel is set to Mute Safe.

You can make Mute Safe settings in the DCA/MUTE GROUP ASSIGN MODE popup window.

### ③ MUTE buttons 1–8

These buttons select the mute group(s) to which this channel is assigned.

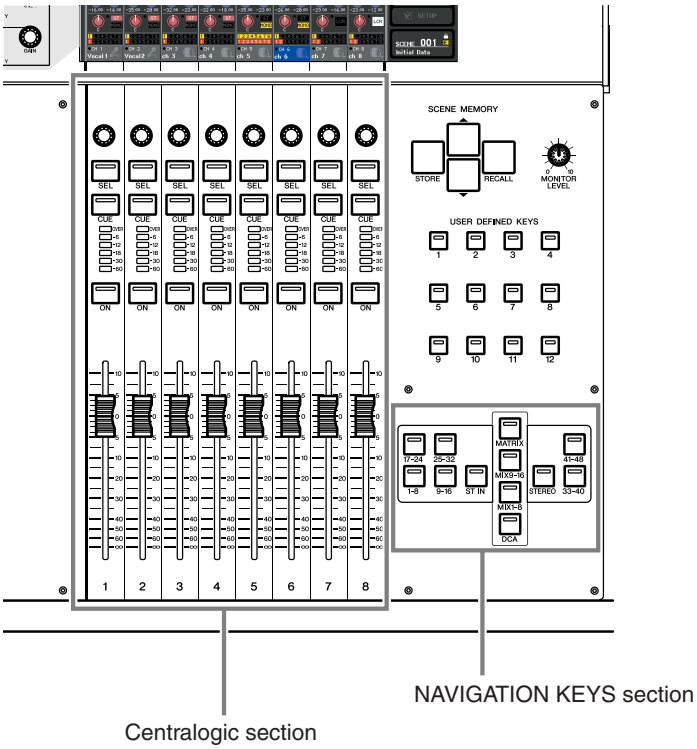
To assign the channel to a mute group, turn on the desired mute button 1–8 (multiple selections are allowed). To check the channels that are assigned to each mute group, press the MUTE popup button to open the DCA/MUTE GROUP ASSIGN MODE popup window. (For details on the popup window → p. 124).

# ◆ Chapter 8 ◆
# Operations in the Centralogic section

This chapter explains how you can use the Centralogic section and the OVERVIEW screen to control up to eight channels at once.

## About the Centralogic section

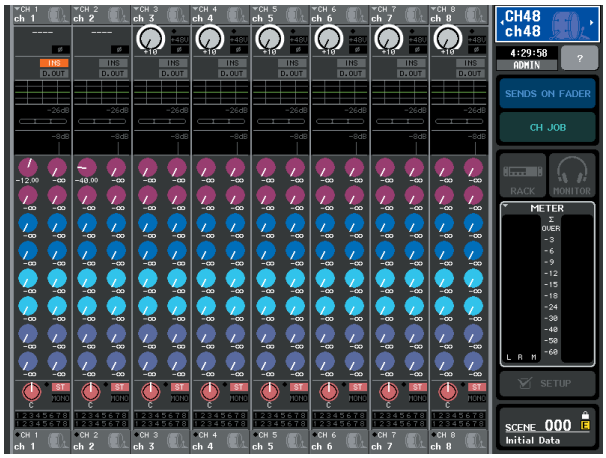
The Centralogic section located below the touch screen lets you recall and simultaneously control a set of up to eight input channels, output channels, or DCA groups.
Use the navigation keys of the NAVIGATION KEYS section to select the channels that will be controlled.




When you press one of the navigation keys in the NAVIGATION KEYS section, the channels / DCA groups corresponding to that key will be assigned to the Centralogic section, and can be controlled using the faders, [ON] keys, and [CUE] keys of the Centralogic section.

# About the OVERVIEW screen

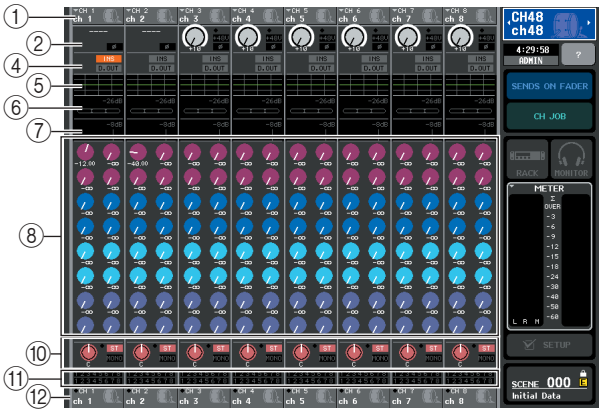
The OVERVIEW screen simultaneously shows the main parameters for the (up to) eight channels currently assigned to the Centralogic section.
When you use the navigation keys to select the eight channels that will be assigned to the Centralogic section, the touch screen will display the OVERVIEW screen for those channels. (The [DCA] key is an exception to this.)



When you press one of the knobs in the OVERVIEW screen, the same type of knob for each channel will be enclosed by a heavy frame.

This heavy frame indicates that the parameter corresponding to those knobs can be edited. In this state, you can operate multifunction encoders 1–8 to edit the parameter values of the corresponding channels.
There is no OVERVIEW screen for the DCA group. This means that if you press the [DCA] key to assign the DCA groups to the Centralogic section, the OVERVIEW screen will continue to show the eight channels that had previously been displayed. In this case, the Centralogic section faders and [ON] keys will control DCA group operations, and the multifunction encoders and [SEL]/[CUE] keys will control the up to eight channels shown in the OVERVIEW screen.

The OVERVIEW screen contains the following items.



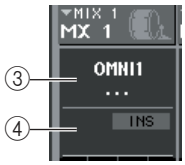

### ① Channel number / Channel name field

This shows the number, name, and icon for the up to eight channels selected for control in the OVERVIEW screen.

### ② HA/PHASE field (input channels only)

For input channels that have a rear panel input jack or external head amp device (e.g., Yamaha AD8HR, SB168-ES) patched to them, the head amp settings (gain setting, phantom power on/off, phase setting) are displayed here. For input channels that have another input port or rack output (internal effect or GEQ) patched to them, information on the input source (port/rack name and number, card name and effect module name, phase setting) will be displayed.

If an output channel is selected, the ② area will change as follows.




### ③ OUTPUT PORT field (output channels only)

This shows the name and number of the output port patched to each channel.

HINT

- *If two or more output ports are patched, a "+" symbol is shown after the name of one of the output ports.*

### ④ INSERT/DIRECT OUT field

- **When an input channel is selected**
  ..... This displays the insert or direct output on/off status of each channel.
- **When an output channel is selected**
  ..... This displays the insert on/off status of each channel.

### ⑤ EQ field
This is a graph that shows the approximate EQ response for each channel.

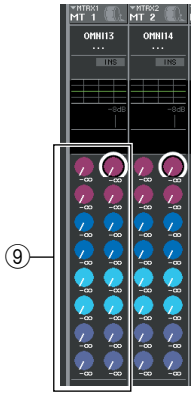
### ⑥ DYNAMICS 1 field
### ⑦ DYNAMICS 2 field (input channels only)
For each channel, this shows the name of the type selected for Dynamics 1, the input level, gain reduction amount, and threshold. If GATE is selected as the dynamics type, a three-step indicator shows the presence or absence of a signal, and the open/closed status of the gate.

### ⑧ TO MIX/TO MATRIX field
This shows the send level of the signal sent from each channel to the MIX buses / MATRIX buses. (If the send-destinations are MATRIX buses, an indication of "TO MATRIX" is shown at the bottom of the field.)
To adjust the send level for each bus, press the corresponding knob to select it, and operate multifunction encoders 1–8.

HINT

- *If input channels are shown, you can use the TO MIX / TO MATRIX button in the SELECTED CHANNEL VIEW screen to change the send-destination shown in this field.*
- *You can also assign the SEND ENCODER MODE function to a user-defined key, and use it to change the send-destination in the same way.*

If MATRIX channels are selected, the ⑧ area will change as follows.




### ⑨ FROM MIX field
This shows the send level of the signals sent from MIX channels 1–16 to each MATRIX bus. To adjust the send level for each bus, press the corresponding knob to select it, and operate multifunction encoders 1–8.

### ⑩ TO STEREO/MONO field
This shows the on/off status of the signal sent from each channel to the STEREO bus and MONO bus, and the panning of the signal sent to the STEREO bus (or the left/right volume balance if the send-source is stereo).
To adjust the value, press the knob to select it, and operate multifunction encoders 1–8.

### ⑪ DCA/MUTE GROUP field
This shows the DCA group (input channels only) and mute group to which each channel belongs.

### ⑫ Channel number / Channel name field
This shows the number, channel name, and icon for the up to eight channels that are currently selected for operation in the Centralogic section (except for the multifunction encoders).

Area ① shows the channels that can be controlled by the OVERVIEW screen, multifunction encoders, [SEL] keys, and [CUE] keys. Area ⑫ shows the channels or DCA groups that can be controlled by the Centralogic section's faders and [ON] keys.
For example if you assign DCA groups to the Centralogic section, the OVERVIEW screen will continue showing the eight channels that had been displayed until then, and in this case the channels or DCA groups shown in areas ① and ⑫ will be different.
On the M7CL, you can leave the channels/groups assigned to the Centralogic section fixed, and switch only the eight-channel groups displayed in the OVERVIEW screen (→ p. 104), and the content shown in ① and ⑫ will differ in this case as well.

# Operations in the Centralogic section

This section explains how you can use the Centralogic section and the OVERVIEW screen to simultaneously control the parameters of up to eight channels.

## 1 Use the navigation keys of the NAVIGATION KEYS section to select the channels or DCA groups that you want to control.

When you press a navigation key, the LED of that key will light. The touch screen will show the OVERVIEW screen, and the parameters of the up to eight channels you selected will appear.

HINT

- *When the SELECTED CHANNEL VIEW screen is displayed, you can switch to the OVERVIEW screen by pressing any of the multifunction encoders 1–8. This is convenient when you want to quickly switch to the OVERVIEW screen while leaving the same channels or DCA groups selected for control.*

## 2 Use the faders and [ON] keys of the Centralogic section to adjust the level of the (up to) eight selected channels and switch them on/off.

HINT

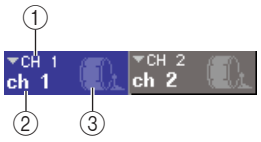
- *The bottom line of the OVERVIEW screen shows the channels or DCA groups that can be controlled by the faders, [ON] key, and [CUE] key of the Centralogic section.*
- *The top line of the OVERVIEW screen shows the channels that can be controlled by multifunction encoders 1–8 of the Centralogic section.*

## 3 Use the fields in the OVERVIEW screen and the multifunction encoders and [CUE] keys to adjust the parameters for the (up to) eight channels.

Subsequent operations will differ depending on the parameters you want to adjust.

### ● Specifying the channel name and icon

In the OVERVIEW screen you can use the channel number and channel name fields to specify the name and icon for each channel. This field includes the following items.




**① Channel number**

The number of that channel or DCA group.

**② Channel name**

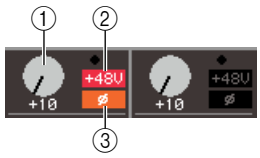
**③ Icon**

These show the name and icon selected for that channel or DCA group.

If you want to change the name or icon, press the field to access the PATCH/NAME popup window. (For details on the popup window → p. 59).

### ● Making HA settings (input channels only)

For input channels to which a rear panel input jack or an external head amp device (e.g., Yamaha AD8HR, SB168-ES) is patched, you can use the HA/PHASE field of the OVERVIEW screen to control the head amp. The HA/PHASE field includes the following items.




**① GAIN knob**

This indicates the gain of the head amp assigned to the channel. To adjust the value, press the knob to select it, and operate multifunction encoders 1–8.

**② +48V**

This indicates the phantom power on (red) or off (black) status for the head amp assigned to the channel.

**③ ø (Phase)**

This indicates either normal phase (black) or reverse phase (orange) for the head amp assigned to the channel.

NOTE

- *The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*

If the channel is patched to an input port that has no head amp, or to the rack (internal effect or GEQ), the port name, number, and phase are shown.

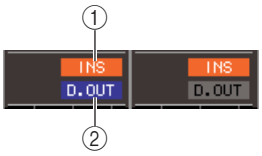
If you want to switch the phantom power on/off, switch the phase between normal/reverse, or change the input port patching for each channel, press the HA/PHASE field (if the GAIN knob is displayed, press the knob to select it and then press the knob once again) to access the HA/PATCH popup window. (For details on the popup window → p. 61).

### ● Changing the output patching (output channels only)

From the OVERVIEW screen, you can change the output port that's patched to an output channel by pressing the OVERVIEW screen's OUTPUT PORT field to access the PATCH/NAME popup window. (For details on the popup window → p. 59).

### ● Making settings for Insert (other than ST IN channels / monitor) or Direct Output (INPUT channels only)

In the OVERVIEW screen, you can use the INSERT / DIRECT OUT field to make settings related to Insert and Direct Output. This field includes the following items.




#### ① INS

This indicates the insert on/off status.

#### ② D.OUT (INPUT channels only)

This indicates the direct output on/off status.

To make details settings for Insert or Direct Output, press the INSERT/DIRECT OUT field to access the INSERT/DIRECT OUT popup window (8 ch). (For details on the popup window → p. 110).

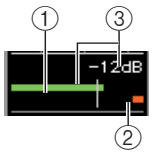
### ● Making ATT/HPF/EQ settings

In the OVERVIEW screen, you can use the EQ graph field to make settings for the ATT (attenuation), HPF (high pass filter), and EQ of each channel.

When you press the EQ graph field, the ATT/HPF/EQ popup window (1 ch) will appear. In this window you can use the on-screen buttons and the multifunction encoders to control all of the ATT/HPF/EQ parameters. (For details on the popup window → p. 115).

### ● Making Dynamics 1/2 settings

In the OVERVIEW screen, you can use the DYNAMICS 1/DYNAMICS 2 fields to make Dynamics 1/2 settings for each channel. These fields include the following items.




#### ① Input level meter

This green bar graph shows the level of the signal after it has passed through dynamics processing.

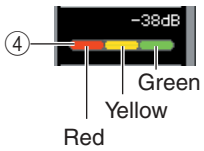
#### ② GR meter

This orange bar graph indicates the amount of gain reduction produced by the dynamics processor.

#### ③ Threshold

The vertical line indicates the currently-specified threshold value and its approximate position in the GR meter.

Only if GATE is selected as the type, the ①–② areas will change as follows.




#### ④ GATE indicator

This indicator shows the operating status of the gate. The following segments will light according to the presence or absence of signal passing through the gate, and according to the open/closed status of the gate.

- **Red**..... This will light if no signal is passing through Dynamics 1 (gain reduction amount = 30 dB or more).
- **Yellow** ..... This will light if the signal is passing through Dynamics 1 and the gate is even slightly closed (gain reduction amount = less than 30 dB).
- **Green**..... This will light if the signal is passing through Dynamics 1 and the gate is open (gain reduction amount = 0 dB).

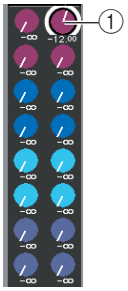
NOTE

*• The DYNAMICS 2 field of the OVERVIEW screen is available only if an input channel is selected.*

If you want to control Dynamics from the OVERVIEW screen, press the DYNAMICS 1/2 field to open the DYNAMICS 1 / DYNAMICS 2 popup window (1 ch). (For details on the popup window → p. 118).

## ● Adjusting the send levels from a channel to all MIX buses / MATRIX buses

In the OVERVIEW screen, you can use the TO MIX / TO MATRIX field to send signals from a channel to the MIX buses and MATRIX buses. This field includes the following items.




### ① TO MIX/TO MATRIX SEND LEVEL knob

Adjusts the send level of the signal sent from the input channel to each MIX bus / MATRIX bus. To adjust the value, press the knob for the desired bus to select it, and operate multifunction encoders 1–8.

If the send-source is an input channel, you'll need to first select the send-destination buses (MIX buses or MATRIX buses). Use the SELECTED CHANNEL VIEW screen TO MIX/TO MATRIX button (→ p. 92) to make this selection. The screen will change as follows according to the buses you select.

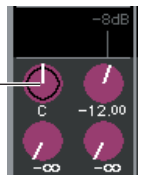
If MIX buses are selected as the send-destination

If MATRIX buses are selected as the send-destination

Press the selected knob once again, and the MIX SEND / MATRIX SEND popup window (8 ch) will appear, depending on the send-destination buses you selected. This popup window contains on/off switches for the signals sent from the channel to the corresponding buses, and lets you select the send point (PRE or POST). (For details on the popup window → p. 234).

If the send-destination MIX bus or MATRIX bus is set to stereo, the left of the two adjacent knobs will operate as the TO MIX PAN or TO MATRIX PAN knob (or as the BALANCE knob if the send-source channel is stereo).

TO MIIX PAN/
TO MATRIX PAN knob




These knobs will adjust the panning between two buses that are set to stereo. (For a stereo channel, they will adjust the volume balance of the left and right channels sent to the two buses.)

### ② TO MIX SEND ON/OFF button

These are on/off switches for the signal sent from the input channel to the MIX buses. These buttons are shown only when the send-source is an input channel and the send-destination is a FIXED type MIX bus.

To switch the on/off status of the signal sent from the channel to VARI type MIX buses or to MATRIX buses, press the selected knob once again to open the MIX SEND / MATRIX SEND popup window (8 ch). (Alternatively, you can use the SELECTED CHANNEL VIEW screen.)

## ● Adjusting the send levels from all MIX channels to a MATRIX bus

In the OVERVIEW screen, you can simultaneously adjust the send level of the signals sent from all MIX channels to each MATRIX bus.
To do this, use the [MATRIX] key of the NAVIGATION KEYS section to assign MATRIX channels 1–8 to the Centralogic section. At this time, the OVERVIEW screen will show the FROM MIX field. This field includes the following items.

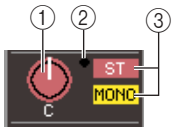
### ① FROM MIX SEND LEVEL knob

For each MATRIX bus, this shows the send level of the signals sent from MIX channels 1–16. To adjust the value, press the knob to select it, and operate multifunction encoders 1–8.

If you press the selected knob once again, the MATRIX SEND popup window (8 ch) will appear. In this popup window you can switch the on/off status of the signal sent from a specific MIX channel to MATRIX buses 1–8, and select the send position (PRE/POST). (Use the ←/→ buttons in the window to select MIX channels. For details on the popup window → p. 70).

## ● Adjusting the pan/balance (INPUT, ST IN, STEREO, and MIX channels only)

In the OVERVIEW screen, you can use the TO STEREO/MONO field to switch the on/off status and adjust the pan/balance of the signal sent from each channel to the STEREO/MONO buses. The following items are shown in the TO STEREO/MONO field.




### ① PAN/BALANCE knob

- **When an INPUT channel or monaural MIX channel is selected**
  ..... The panning of the signal sent to the STEREO bus is shown.
- **When a ST IN channel or a stereo MIX channel is selected**
  ..... The balance of the left/right signals sent to the STEREO bus is shown and adjust the output balance to the STEREO bus.
- **When a STEREO channel or a stereo MATRIX channel is selected**
  ..... The balance of the left/right output signals is shown.

To adjust the value, press the knob to select it, and operate multifunction encoders 1–8.

If you press the selected knob once again, the TO STEREO/MONO popup window (8 ch) will appear. In this popup window, you can switch between ST/MONO mode and LCR mode, and change the on/off status of the signal sent to the STEREO/MONO bus for up to eight channels at a time. (For details on the popup window → p. 63).

### ② OVER indicator

This indicator will light if any of the level detection points in each channel reach the OVER level.

### ③ ST/MONO indicator (INPUT, ST IN, and MIX channels only)

This indicates the on/off status of the signal sent from that channel to the STEREO (L/R) bus and MONO (C) bus. To switch this on/off, press the selected knob once again to open the TO STEREO/MONO popup window.

If an INPUT, ST IN, or MIX channel is set to LCR mode, the ③ area will change as follows.

### ④ LCR indicator (INPUT, ST IN, MIX channels only)

The LCR indicator shows the overall on/off status of the signals sent from that channel to the STEREO (L/R) bus and MONO (C) bus.

To switch this on/off, press the selected knob once again to open the TO STEREO/MONO popup window.

## ● Assigning a channel to a DCA group or Mute group

In the OVERVIEW screen, you can use the DCA/MUTE GROUP field to assign a channel to a DCA group (input channels only) or mute group. This field includes the following items.

### ① DCA indicator (input channels only)

This indicator shows the DCA group(s) to which the input channel is assigned. The numbers of DCA groups to which this channel belongs are highlighted.

### ② Mute indicator

This indicator shows the mute groups to which the channel is assigned. The numbers of mute groups to which this channel belongs are highlighted.

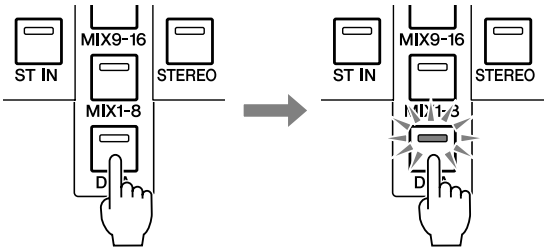
To assign a channel to a DCA group or Mute group, press the DCA/MUTE GROUP field to open the DCA/MUTE GROUP ASSIGN popup window. (For details on the popup window → p. 124).

# Fixing the channels or DCA groups of the Centralogic section

If desired, you can fix the channels or DCA groups controlled by the faders, [ON] keys, meters, [CUE] keys, and [SEL] keys of the Centralogic section, and switch between groups of eight channels for control in the OVERVIEW screen.
In this case, the multifunction encoders will control a different set of eight channels than the Centralogic section's faders and [ON] keys.

**1 In the NAVIGATION KEYS section, press the navigation key for the channels or DCA group you want to fix in the Centralogic section, and hold it down for two seconds or longer.**

The LED of the navigation key will blink. The blinking indicates that the corresponding channels or DCA groups are now fixed to the Centralogic section.



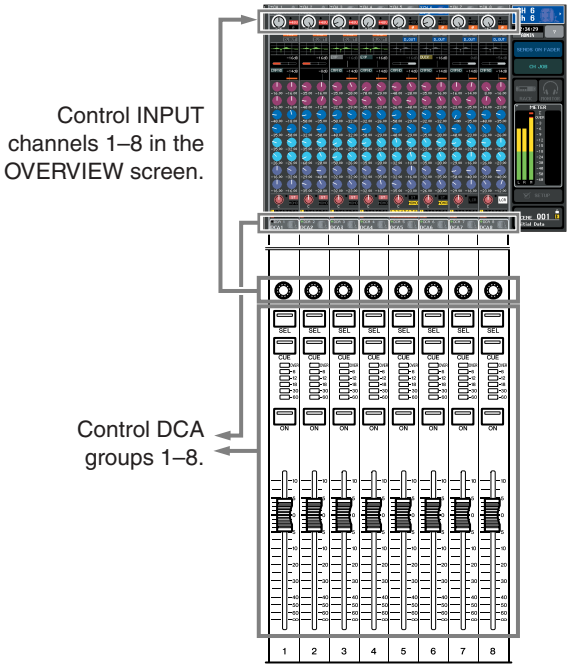

**2 Press a navigation key (other than the [DCA] key) to select the eight channels you want to control in the OVERVIEW screen.**

The LED of the navigation key you selected in step 2 will light. The lit status indicates that the corresponding channels can be controlled in the OVERVIEW screen and by the multifunction encoders.

NOTE

- *You cannot operate DCA groups in the OVERVIEW screen using the multifunction encoders. For this reason, pressing the [DCA] key in step 2 will have no effect.*

The following illustration shows the example of when the DCA groups are fixed to the Centralogic section, and INPUT channels 1–8 are controlled in the OVERVIEW screen.




**3 As desired, use the navigation keys to switch the group of eight channels controlled by the OVERVIEW screen, multifunction encoders.**

**4 To release the channels or DCA groups that were fixed to the Centralogic section, press the navigation key you operated in step 1 once again, and hold it down until the navigation key LED changes from blinking to lit.**

When the navigation key LED changes to being lit, its channels or DCA groups will be assigned to both the Centralogic section and the OVERVIEW screen.

# ◆ Chapter 9 ◆
# Input/output patching

This chapter explains how to edit the input patch and output patch settings, and how to use insert connections and direct output.

## Changing the output patch settings

When the M7CL is in its default state, the output ports are patched to the following channels.

**• M7CL-32/48**

| | |
|---|---|
| **OMNI OUT jacks 1–12** | MIX channels 1–12 |
| **OMNI OUT jacks 13/14** | MATRIX channels 1/2 |
| **OMNI OUT jacks 15/16** | STEREO channel (L/R) |
| **2TR OUT DIGITAL jack** | STEREO channel (L/R) |
| **Slot 1 output channels 1–8** | MIX channels 1–8 |
| **Slot 1 output channels 9–16** | MIX channels 1–8 |
| **Slot 2 output channels 1–8** | MIX channels 9–16 |
| **Slot 2 output channels 9–16** | MIX channels 9–16 |
| **Slot 3 output channels 1–8** | MATRIX channels 1–8 |
| **Slot 3 output channels 9–16** | MATRIX channels 1–8 |

**• M7CL-48ES (Daisy chain)**

| | |
|---|---|
| **SB168-ES (ID #1) OUTPUT jacks 1–6** | MIX channels 1–6 |
| **SB168-ES (ID #1) OUTPUT jacks 7/8** | STEREO channel (L/R) |
| **SB168-ES (ID #2) OUTPUT jacks 1–6** | MIX channels 7–12 |
| **SB168-ES (ID #2) OUTPUT jacks 7/8** | STEREO channel (L/R) |
| **SB168-ES (ID #3) OUTPUT jacks 1–6** | MATRIX channels 1–6 |
| **SB168-ES (ID #3) OUTPUT jacks 7/8** | STEREO channel (L/R) |
| **OMNI OUT jacks 1–4** | MATRIX channels 1–4 |
| **OMNI OUT jacks 5/6** | MONITOR OUT channel (L/R) |
| **OMNI OUT jacks 7/8** | STEREO channel (L/R) |
| **2TR OUT DIGITAL jack** | STEREO channel (L/R) |
| **Slot 1 output channels 1–8** | MIX channels 1–8 |
| **Slot 1 output channels 9–16** | MIX channels 1–8 |
| **Slot 2 output channels 1–8** | MIX channels 9–16 |
| **Slot 2 output channels 9–16** | MIX channels 9–16 |
| **Slot 3 output channels 1–8** | MATRIX channels 1–8 |
| **Slot 3 output channels 9–16** | MATRIX channels 1–8 |

However, the above patching can be changed as desired. To change the patching, you can either select the output port that will be the output destination of each output channel, or you can select the output channel that will be the output source for each output port.

### ● Selecting the output port for each output channel

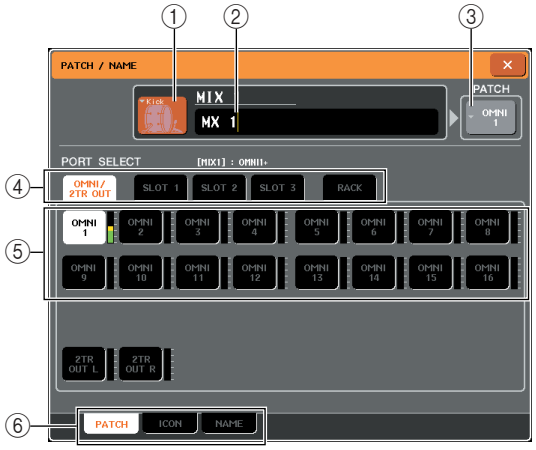
Here's how to select the output port that will be the output destination for each output channel.

**1 Use the navigation keys to access the OVERVIEW screen containing the output channel whose output port you want to assign.**

① **Channel number / Channel name**

**2 In the top part of the screen, press the channel number / channel name field to access the PATCH / NAME popup window.**

In the PATCH / NAME popup window you can change the channel name, icon, and output port assigned to each output channel. The window includes the following items.



### ① Icon button
This indicates the icon selected for that channel. When you press this button, a screen will appear in which you can select an icon or sample name.

### ② Channel name input box
This indicates the name assigned to that channel. When you press this field, a keyboard window allowing you to assign a name will appear.

### ③ Output port button
This indicates the currently selected output port. If you press this button when selecting an icon or changing the channel name, you will return to the output port select screen.

### ④ Output port select tabs
These tabs select the output ports shown in the popup window. Each tab corresponds to the following output ports.

- **OMNI/2TR OUT (M7CL-32/48)**
  OMNI OUT jacks 1–16 and the 2TR OUT DIGITAL jack will be displayed.
- **ES/2TR OUT (M7CL-48ES)**
  EtherSound output channels 1–24 and the 2TR OUT DIGITAL jack will be displayed.
- **SLOT 1–SLOT 3**
  Output channels 1–16 of slots 1–3 will be displayed.
- **RACK**
  The input ports of rack 1–8 will be displayed.

HINT

• *For details on the GEQ, refer to p. 175.*

### ⑤ Output port select buttons
These buttons assign an output port to the currently selected output channel.

### ⑥ Tabs
Use these tabs to switch between items.

**3 Use the output port select tabs and the output port select buttons to specify the output port that will be assigned to that channel.**

If the output port select buttons are not shown at the bottom of the window, press the PATCH tab.

**4 Use the navigation keys and the [SEL] keys to switch the output channels being controlled, and specify their output ports in the same way.**

**5 When you have finished making settings, press the "×" symbol located in the upper right to close the window.**

You will return to the OVERVIEW screen.

## ● Selecting the output channel for each output port

Here's how you can select the output channel that will be the output source for each output port.

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the SYSTEM SETUP field located in the center of the screen, press the OUTPORT SETUP button to open the OUTPUT PORT popup window.**

In the OUTPUT PORT popup window you can assign the source channel for each output port. The popup window includes the following items.

### ① Slot number / Card type
If an output channel of slot 1–3 is selected for operations, this shows the slot number and the type of I/O card installed in that slot.

### ② DELAY SCALE field
Here you can select the units for the delay time shown below the delay time knob (⑤).

- **METER (343.59m/s)**
  ..... The delay time is shown as a distance in meters, calculated as the speed of sound (343.59 m/s) at an air temperature of 20 °C (68 °F) multiplied by the delay time (seconds).

- **FEET (1127.26ft/s)**
  .....The delay time is shown as a distance in feet, calculated as the speed of sound (1127.26 feet/s) at an air temperature of 20 °C (68 °F) multiplied by the delay time (seconds).
- **SAMPLE**.....The delay time is shown as a number of samples. If you change the sampling frequency at which the M7CL operates, the number of samples will change accordingly.
- **msec** .....The delay time is shown in units of milliseconds. If this button is on, the same value is displayed above and below the delay time knob (⑤).

### ③ Output port
This indicates the type and number of the output port to which the channel is assigned.

### ④ Channel select popup button
This button lets you select the channel that is assigned to the output port. The name of the currently selected channel is displayed.

### ⑤ Delay time knob
This knob sets the delay time of the output port. Press this knob to select it, and use multifunction encoders 1–8 to adjust the settings. The millisecond value is shown above the knob, and the delay time value in the units selected in the DELAY SCALE field (②) is shown below the knob.

### ⑥ DELAY button
Switches the output port delay on/off.

### ⑦ ø (Phase) button
Switches the phase of the signal assigned to the output port between normal phase (black) and reverse phase (orange).

### ⑧ ATT knob
Adjusts the amount of attenuation for the signal assigned to the output port. To adjust this value, press the knob in the screen to select it, and operate multifunction encoders 1–8. You can adjust the setting in 0.1 dB steps over a range of -96 to +24 dB. The current value is shown immediately below the knob.

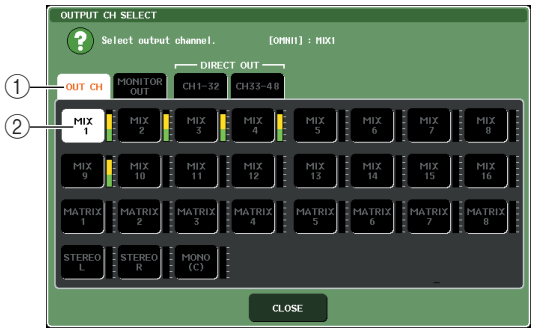
### ⑨ Level meter
This meter indicates the level of the signal assigned to the output port.

### ⑩ Output port select tabs
These tabs switch the output ports controlled in the popup window in groups of up to eight ports.

## 3 Use the output port select tabs at the bottom of the popup window to select the output port you want to control.
Each tab corresponds to the following output ports.

- **ES 1–8, 9–16, 17–24 (M7CL-48ES)**
  These tabs enable you to control EtherSound output channels 1–8, 9–16 and 17–24 respectively.
- **OMNI 1–8**
  This tab enables you to control OMNI OUT jacks 1–8.
- **OMNI 9–16 (M7CL-32/48)**
  This tab enables you to control OMNI OUT jacks 9–16.
- **SLOT1 1–8, 9–16**
- **SLOT2 1–8, 9–16**
- **SLOT3 1–8, 9–16**
  These control output channels 1–8 and 9–16 of slots 1–3 respectively.
- **2TR OUT**
  Control the L/R channels of the 2TR OUT DIGITAL jack.

## 4 To assign a channel to an output port, press the channel select popup window for that port.
The OUTPUT CH SELECT popup window will appear. The popup window includes the following items.




### ① Channel select tabs
These select the type of channel shown in the popup window. Each tab corresponds to the following channels.

- **OUT CH**..... Shows the output channels (MIX channels 1–16, MATRIX channels 1–8, STEREO L/R channels, and MONO (C) channel).
- **MONITOR OUT**
  ..... Shows the MONITOR OUT L/R/C channels.
- **CH 1–32**
- **CH 33–48 (M7CL–48/48ES only)**
  ..... Shows INPUT channels 1–32 (1–48)

### ② Channel select button
Selects the channel to be assigned to the output port you selected in step 3.

HINT

*• If you selected CH 1–32 or CH 33–48 {M7CL–48 only}, the input channel you selected will be output directly from the corresponding output port. At this time, the channel select button in the OUTPUT PORT popup window is shown as "DIR CH xx" (xx= channel number). (For details on direct output→ p. 112).*

**5 Use the channel select tabs and the channel select buttons to select the source channel, and press the CLOSE button.**

You will return to the OUTPUT PORT popup window.

HINT

*• If PATCH CONFIRMATION is ON, a confirmation dialog box will appear when you attempt to change the patch settings. If STEAL PATCH CONFIRMATION is ON, a confirmation dialog box will appear when you attempt to change a location that is already patched elsewhere. (For details, refer to → p. 214).*

**6 Make settings for delay, phase, and attenuator as desired.**

**7 Repeat step 3–6 to assign channels for other output ports.**

**8 When you have finished making settings, click the "×" symbol in the upper right of the window to return to the previous screen.**

# Changing the input patch settings

When the M7CL is in its default state, the following input ports are patched to each input channel.

**• M7CL-32/48**

| | |
|---|---|
| **INPUT channels 1–32 {1–48}** | INPUT jacks 1–32 {1–48} |
| **ST IN channels 1–4** | RACK 5–8 |

**• M7CL-48ES (Daisy chain)**

| | |
|---|---|
| **INPUT channels 1–16** | SB168-ES (ID #1) INPUT jacks 1–16 |
| **INPUT channels 17–32** | SB168-ES (ID #2) INPUT jacks 1–16 |
| **INPUT channels 33–48** | SB168-ES (ID #3) INPUT jacks 1–16 |
| **ST IN channels 1–4** | RACK 5–8 |

However, the above patching can be changed as desired. Here we will explain how to change the patching for each input channel.

**1 Use the navigation keys to access the OVERVIEW screen for the input channels whose input source you want to change.**

**① Channel number / Channel name**

**2 In the top part of the screen, press the channel number / channel name field to access the PATCH / NAME popup window.**

In the PATCH / NAME popup window you can change the channel name, icon, and input port assigned to each input channel.

**[PATCH / NAME popup window (PATCH)]**

**① Input port button**

This indicates the currently selected input port. If you press this button when selecting an icon or changing the channel name, you will return to the input port select screen.

**② Icon button**

This indicates the icon selected for that channel. When you press this button, a screen will appear in which you can select an icon or sample name.

**③ Channel name input box**

This indicates the name assigned to that channel. When you press this field, a keyboard window allowing you to assign a name will appear.

### ④ Input port select tabs

These tabs select the input ports shown in the popup window. Each tab corresponds to the following input ports.

- **IN 1–32 (M7CL-32/48)**
  .....INPUT jacks 1–32 will be displayed.
- **IN 33–48 {M7CL-48}**
  .....INPUT jacks 33–48 will be displayed.
- **ES 1–32, 33–48 (M7CL-48ES)**
  .....EtherSound input channels 1–32 and 33–48 will be displayed.
- **ST IN (M7CL-32/48)**
  .....L/R channels of ST IN jacks 1–4 will be displayed.
- **OMNI (M7CL-48ES)**
  .....OMNI OUT jacks 1–8 will be displayed.
- **SLOT 1–SLOT 3**
  .....Input channels 1–16 of slots 1–3 will be displayed.
- **RACK**.....The output ports of rack 1–8 will be displayed.

### ⑤ Input port select buttons

These buttons assign an input port to the currently selected input channel.

### ⑥ Tabs

Use these tabs to switch between thems.

## 3 Access the input port selection screen of the PATCH / NAME popup window, and use the input port select tabs and input port select buttons to select an input port.

HINT

- *If PATCH CONFIRMATION is ON, a confirmation dialog box will appear when you attempt to change the patch settings. If STEAL PATCH CONFIRMATION is ON, a confirmation dialog box will appear when you attempt to change a location that is already patched elsewhere. (For details, refer to→ p. 214).*

## 4 When you have finished making settings, press the "×" symbol located in the upper right to close the window.

You will return to the OVERVIEW screen.

HINT

- *In the PATCH / NAME popup window you can select the icon for a channel or assign a name to it (→ p. 59).*
- *You can also select input ports from the HA/PATCH popup window.*

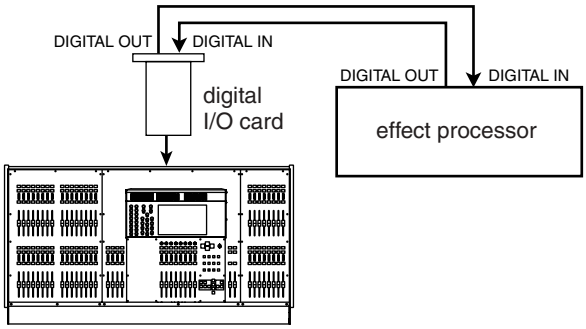
## 5 Repeat step 2–4 to assign input ports for other channels.

# Inserting an external device into a channel

If desired, you can insert an effect processor or other external device into the signal path of an INPUT, MIX, MATRIX, STEREO, or MONO channel. When doing so, the type of input/output port used for the insertion and the location of the insertion in/out can be specified individually for each channel.

## 1 As desired, connect your external equipment to the I/O card(s) in slots 1–3.

If you are using the M7CL-48ES, you can also connect your external equipment to the OMNI IN/OUT jacks.




M7CL

HINT

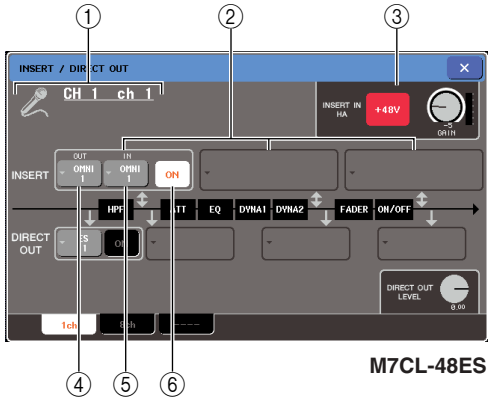
- *If you install a digital I/O card in a slot and digitally connect an external device, you'll need to synchronize the word clock between the M7CL and your external device (→ p. 230).*

## 2 Use the navigation keys to access the OVERVIEW screen for the channel to which you want to assign an input source.

## 3 Press the INSERT/DIRECT OUT field to access the INSERT/DIRECT OUT popup window.

In the INSERT/DIRECT OUT popup window you can view or change the type of input/output port used for insertion and the location at which insertion will occur. There are two variations of this popup window; one-channel and eight channel. These windows include the following items.

### [INSERT/DIRECT OUT popup window (1ch)]




M7CL-48ES

### ① Icon / Channel number / Channel name

This indicates the icon selected for that channel, the channel number, and the channel name.

### ② INSERT field

Here you can make insert-related settings. Press one of three fields to choose PRE EQ (immediately before the attenuator), PRE FADER (immediately before the fader) or POST ON (immediately after the [ON] key) as the insert-out/in position.

### ③ INSERT IN HA field (M7CL-48ES only)

This field appears if the OMNI IN jack is used as insert-in, and enables you to turn on or off the phantom power to the OMNI IN jack and to set the HA gain.

### ④ INSERT OUT popup button

This indicates the output port that is selected as the insert-out for this channel. Press this button to open a popup window where you can select the output port.

### ⑤ INSERT IN popup button

This indicates the input port that is selected as the insert-in for this channel. Press this button to open a popup window where you can select the input port.

### ⑥ INSERT ON/OFF button

This button switches the insert on/off. If this button is off, the insert-signal path is bypassed.

### [INSERT/DIRECT OUT popup window (8ch)]

### ① Channel number / Icon

This shows the channel number and the icon that is selected for that channel. You can press this field to change the selected channel.

### ② Channel name

This indicates the name assigned to that channel.

### ③ INSERT OUT popup button

This indicates the output port that is selected as the insert-out for this channel. Press this button to open a popup window where you can select the output port. The currently specified insert-out/in position is shown below the button.

④ **INSERT ON/OFF button**

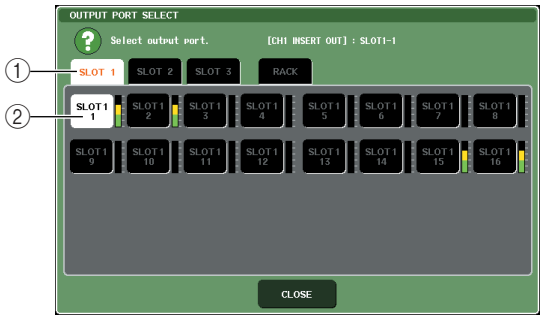
This button switches the insert on/off. If this button is off, the insert-out/in signal path is bypassed.

⑤ **INSERT IN popup button**

This indicates the input port that is selected as the insert-in for this channel. Press this button to open a popup window where you can select the input port.

## 4 Access either the one-channel or the eight-channel INSERT/DIRECT OUT popup window, and press the INSERT OUT popup button.

The OUTPUT PORT SELECT popup window will appear, allowing you to select the output port used for insert-out. The window includes the following items.




① **Output port select tabs**

These tabs select the output ports shown in the window. Each tab corresponds to the following output ports.

- **OMNI (M7CL-48ES only)**
  ..... OMNI OUT jacks 1–8 will be displayed.
- **SLOT 1–SLOT 3**
  ..... Output channels 1–16 from slots 1–3 will be displayed.
- **RACK** ..... Input ports to rack 1–8 will be displayed.

② **Output port select buttons**

These buttons assign the output port that will be used as insert-out for the currently selected channel.

NOTE

- *If a rack in which a GEQ is mounted is specified as the insert-out or insert-in, the other patch point will automatically be assigned to the same rack. Also, insert mode will automatically be switched on. Additionally, if you defeat the insert-out or insert-in of a rack in which a GEQ is mounted, the other patch point will automatically be defeated and at the same time insert mode will automatically be switched off.*

## 5 Use the output port select tabs and the output port select buttons to specify the output port that will be used as insert-out, and press the CLOSE button.

You will return to the INSERT/DIRECT OUT popup window.

## 6 Press the INSERT IN popup button.

The INPUT PORT SELECT popup window will appear, allowing you to select the input port used for insert-in. Each tab corresponds to the following input ports.

- **OMNI (M7CL-48ES only)**
  ..... OMNI IN jacks 1–8 will be displayed.
- **SLOT 1–SLOT 3**
  ..... Input channels 1–16 of slots 1–3 will be displayed.
- **RACK** ..... Output ports to rack 1–8 will be displayed.

## 7 Specify the input port you will use for insert-in, and press the CLOSE button.

## 8 Press the INSERT ON/OFF button to turn it ON.

In this state, insert-out/in is enabled. Adjust the input/output levels of your external device as necessary.

HINT

- *If you have selected the OMNI IN jack on the M7CL-48ES as the input port for insert-in, make the HA settings in the INSERT IN HA field.*
- *Even if the INSERT ON/OFF button is OFF, the signal selected for insert-out will continue to be sent.*

## 9 If you want to change the insert-out/in position, access the one-channel INSERT/DIRECT OUT popup button, and press one of the three INSERT fields.

The INSERT field you pressed will be enabled.

## 10 When you have finished making all settings, click the "×" symbol located in the upper right to close the window.

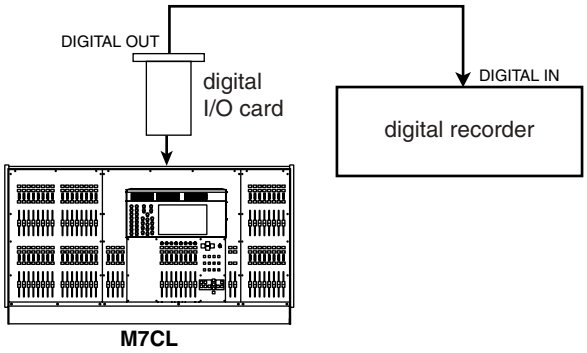
You will return to the OVERVIEW screen.

## 11 As desired, make insert settings for other channels as well.

# Directly outputting an INPUT channel

The signal of an INPUT channel can be directly output from a desired OMNI OUT jack, OUTPUT jack, or from an output channel of the desired slot. For example, signals can be sent via a digital I/O card installed in a slot to an external digital recorder, so that a live recording can be made without being affected by mixing operations within the M7CL.

## 1 As desired, connect your external equipment to an OMNI OUT jack, OUTPUT jack, or to an I/O card in slots 1–3.




M7CL

HINT

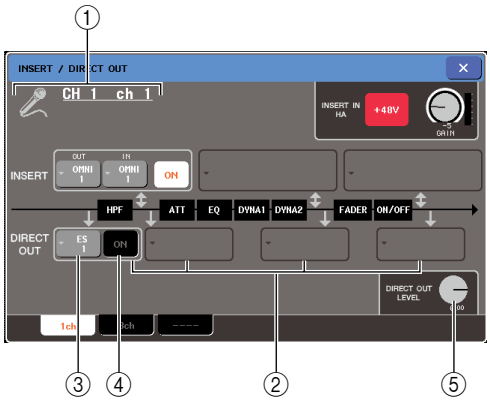
- *If you install a digital I/O card in a slot and digitally connect an external device, you'll need to synchronize the word clock between the M7CL and your external device (→ p. 230).*

## 2 Use the navigation keys to access the OVERVIEW screen for the input channel that you want to directly output.

## 3 Press the INSERT/DIRECT OUT field to access the INSERT/DIRECT OUT popup window.

There are two variations of this popup window; one-channel and eight channel. These windows include the following items.

**[INSERT/DIRECT OUT popup window (1ch)]**




M7CL-48ES

### ① Icon / Channel number / Channel name

This indicates the icon selected for that channel, the channel number, and the channel name.

### ② DIRECT OUT field

Here you can make settings for direct output. Press a field to select PRE HPF (before the HPF), PRE EQ (after the attenuator), PRE FADER (before the fader), or POST ON (after the [ON] key) as the position for direct output.

### ③ DIRECT OUT popup button

This indicates the output port used for direct output. Press this button to open a popup window where you can select the output port.

### ④ DIRECT OUT ON/OFF button

Turns the direct output on/off.

### ⑤ DIRECT OUT LEVEL knob

Adjusts the level of the signal that is directly output.

**[INSERT/DIRECT OUT popup window (8ch)]**

### ① Channel number / Icon

This shows the channel number and the icon that is selected for that channel. You can press this field to change the selected channel.

### ② Channel name

This indicates the name assigned to that channel.

### ③ DIRECT OUT ON/OFF button

This button switches the direct output on/off. If this button is off, the direct output for that channel will be disabled.

The currently selected direct output position is shown above the button.

### ④ DIRECT OUT popup button

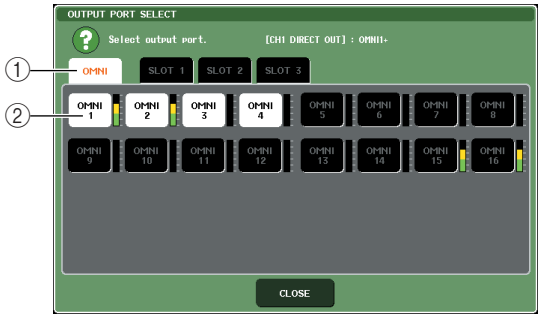
This indicates the output port used for direct output. Press this button to open a popup window where you can select the output port.

### ⑤ DIRECT OUT LEVEL knob

Adjusts the level of the signal that is directly output.

## 4 Access either the one-channel or the eight-channel INSERT/DIRECT OUT popup window, and press the DIRECT OUT popup button.

The OUTPUT PORT SELECT popup window will appear, allowing you to select the output port used for direct output. The window includes the following items.




### ① Output port select tabs

These tabs select the output ports shown in the window. Each tab corresponds to the following output ports.

- **ES (M7CL-48ES)** ..... EtherSound output channels 1–24 will be displayed.
- **OMNI** ..... OMNI OUT jacks 1–16 (1–8 on the M7CL-48ES) will be displayed.
- **SLOT 1–SLOT 3** ..... Output channels 1–16 of slots 1–3 will be displayed.

### ② Output port select buttons

These buttons assign the output port used for direct output of the currently selected INPUT channel.

## 5 Use the output port select tabs and the output port select buttons to specify the output port that will be used for direct output, and press the CLOSE button.

You will return to the INSERT/DIRECT OUT popup window.

## 6 Press the DIRECT OUT ON/OFF button to turn it ON.

In this state, direct output is enabled. Adjust the input level of your external device as necessary.

HINT

*• With the factory settings, all are turned off.*

## 7 If you want to change the position of the direct output, access the one-channel INSERT/DIRECT OUT popup button, and press one of the three DIRECT OUT fields.

The DIRECT OUT field you pressed will be enabled.

## 8 If you want to adjust the level of the direct output, access either the one-channel or the eight-channel INSERT/DIRECT OUT popup window, and operate the DIRECT OUT LEVEL knob.

## 9 When you have finished making all settings, click the "×" symbol located in the upper right to close the window.

You will return to the OVERVIEW screen.

## 10 As desired, make direct output settings for other channels as well.

# ◆ Chapter 10 ◆
# EQ and Dynamics

This chapter explains the EQ (equalizer) and dynamics that are provided on each channel of the M7CL.

## About EQ and dynamics

Each input channel and output channel of the M7CL provides a four-band EQ and dynamics. EQ can be used on all input channels and all output channels. An attenuator is provided immediately before the EQ, allowing you to adjust the level of the input signal. Input channels also provide a high-pass filter that is independent of the EQ.
Input channels provide two dynamics processors; Dynamics 1 can be used as a gate, ducking, compressor, or expander, while Dynamics 2 can be used as a compressor, hard compander, soft compander, or de-esser. Output channels provide one dynamics processor, which can be used as a compressor, expander, hard compander, or soft compander.

## Using EQ

This section explains the four-band EQ that is provided on input channels and output channels.

**1 Use the navigation keys to access the OVERVIEW screen for the channel whose EQ you want to control.**

The EQ field shows the response of the EQ. In this OVERVIEW screen, you can use the EQ encoders of the SELECTED CHANNEL section to edit the parameter settings.

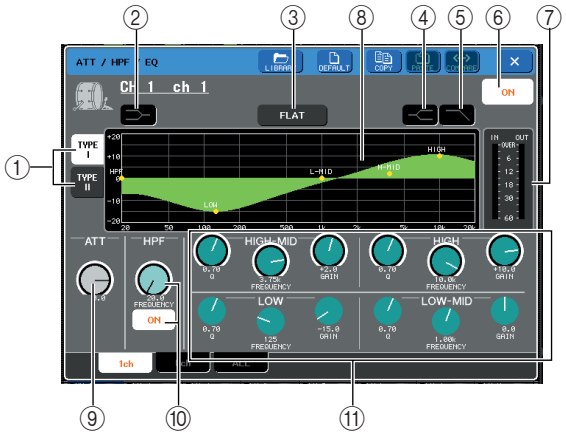
**2 If you want to edit while watching the ATT/HPF/EQ parameter values, press the EQ field in the OVERVIEW screen to access the ATT/HPF/EQ popup window.**

In the ATT/HPF/EQ popup window, you can edit the EQ and high-pass filter parameters and switch them on/off.

There are three variations of this popup window; one-channel, eight-channel, and ALL. These windows include the following items.

**[ATT/HPF/EQ popup window (1 ch)]**

This lets you view and edit all EQ parameters of the currently selected channel. This is convenient when you want to make detailed EQ settings for a specific channel.




**① TYPE I, II buttons**

These buttons select the type of EQ. Turn the TYPE I button on if you want to use the same algorithm as on previous Yamaha digital mixers, or turn the TYPE II button on if you want to use the newly developed algorithm. TYPE II reduces the interference between bands.

**② LOW shelving button**

If this button is on, the LOW band EQ will function as a shelving-type EQ. In this case, the LOW band Q knob is not shown.

### ③ FLAT button
This button resets the GAIN parameters of all bands to the default value (0.0 dB). If you press this button, a confirmation dialog box will appear.

### ④ HIGH shelving button
If this button is on, the HIGH band EQ will function as a shelving-type EQ. In this case, the HIGH band Q knob is not shown.

### ⑤ Low pass filter button
If this button is on, the HIGH band EQ will function as a low-pass filter. In this case, the HIGH band Q knob is not shown, and the GAIN knob will act as an on/off switch for the low pass filter.

### ⑥ EQ ON/OFF button
Switches the EQ on/off.

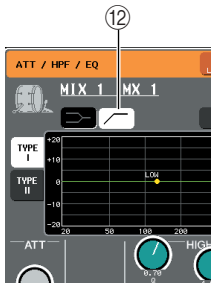
### ⑦ Level meter
These meters indicate the peak levels before EQ and after EQ. If the signal clips before or after EQ, the OVER segment will light. If the corresponding channel is stereo (a ST IN channel, a MIX/MATRIX channel set to stereo, or the STEREO channel), level meters for two channels are displayed.

### ⑧ EQ graph
This graph shows the approximate response of the EQ parameters. A pointer is shown at the peak of each band. The response curve will change when you edit the Q, FREQUENCY, or GAIN knobs of each band. If the EQ or high-pass filter is on, the response curve is highlighted.

### ⑨ ATT knob
This knob adjusts the amount of attenuation/gain immediately before input to the EQ, in a range of -96 dB to +24 dB. Use this to compensate for level changes produced by the EQ. You can use multifunction encoder 1 to control this.

### ⑩ HPF knob, HPF ON/OFF button (input channels only)
Here you can switch on/off the high pass filter located after attenuation and before EQ, and adjust its cutoff frequency. You can use multifunction encoder 2 to adjust the cutoff frequency in a range of 20–600 Hz.

### ⑪ Q/FREQUENCY/GAIN knobs
These knobs adjust the Q, FREQUENCY (center frequency), and GAIN (amount of boost/cut) for each band (LOW, LOW MID, HIGH MID, and HIGH). Press a knob to select the band you want to control, and use multifunction encoders 3–8 to make adjustments.




### ⑫ High-pass filter button (output channels only)
If this button is on, the LOW band EQ will function as a high-pass filter. In this case, the LOW band Q knob is not shown, and the GAIN knob will act as an on/off switch for the high-pass filter.

## [ATT/HPF/EQ popup window (8 ch)]
This shows the input channel or output channel EQ settings in groups of eight channels at a time.

Use the encoders of the SELECTED CHANNEL section to edit the EQ settings. This window lets you control the ATT and HPF settings of all eight channels shown.

### ① Channel select button
This indicates the channel number, the icon selected for that channel, and the channel name. Press these buttons to select the channel you want to copy or paste, or to select multiple channels.

### ② EQ graph
This mini-graph shows the approximate response of the EQ parameters. You can press the EQ graph to switch to the one-channel window with that channel selected. If the EQ or high-pass filter is on, the response curve is highlighted.

### ③ EQ ON/OFF button
Switches the EQ on/off.

### ④ ATT knob
This knob adjusts the attenuation / gain amount before the signal enters the EQ. You can press the ATT knob to select it, and then use multifunction encoders 1–8 to make adjustments.

### ⑤ HPF knob, HPF ON/OFF button (input channels only)
These controls switch the high-pass filter on/off, and adjust its cutoff frequency. You can press the HPF knob to select it, and then use multifunction encoders 1–8 to make adjustments.

### [EQ popup window (ALL)]

This window displays all input channels (or output channels) at once. This page is only for display, and does not allow the parameters to be edited. It is useful when you need to quickly check the EQ settings for all channels, or when you want to copy/paste EQ settings between distant channels.

#### ① Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. Press these buttons to select the channel you want to copy or paste, or to select multiple channels.

#### ② EQ graph

This mini-graph shows the approximate response of the EQ parameters. You can press the EQ graph to switch to the one-channel window with that channel selected. If the EQ or high-pass filter is on, the response curve is highlighted.

## 3 Access the ATT/HPF/EQ popup window (1 ch), and press the EQ ON button to enable the EQ.

If the ATT/HPF/EQ popup window is displayed, you will be able to edit all of the EQ parameters.

## 4 If you want to use the high-pass filter on an input channel, operate the HPF knob or HPF ON/OFF button in the ATT/HPF/EQ popup window.

Input channels provide a high-pass filter that is independent of the four-band EQ. The HPF ON/OFF button switches the high-pass filter on/off, and the HPF knob adjusts the cutoff frequency.

HINT

- *Output channels do not have a high-pass filter that is independent of the EQ. However, you can turn on the high-pass button in the popup window to use the LOW band EQ as a high-pass filter.*
- *For both input channels and output channels, you can turn on the low-pass filter button to use the HIGH band EQ as a low-pass filter.*

## 5 If you want to copy EQ settings to another channel, or initialize the EQ settings, use the tool buttons of the ATT/HPF/EQ popup window.

For details on how to use these buttons, refer to "Using the tool buttons" (→ p. 35).

HINT

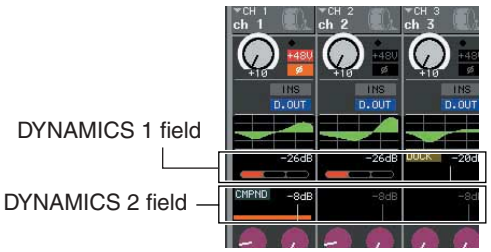
- *EQ settings can be saved/loaded at any time using the dedicated library (→ p. 35). Presets suitable for a variety of instruments or situations are also provided.*
- *You can also access the SELECTED CHANNEL VIEW screen, and use the encoders of the SELECTED CHANNEL section to edit the EQ and high-pass filter (→ p. 91).*
- *Even when the ATT/HPF/EQ popup window is displayed, you can use the encoders of the SELECTED CHANNEL section to control the EQ.*

# Using dynamics

Input channels provide two dynamics processors, and output channels provide one dynamics processor.

## 1 Use the navigation keys to access the OVERVIEW screen for the channel whose dynamics you want to control.

The DYNAMICS 1/2 field shows the dynamics on/off status and the amount of gain reduction.



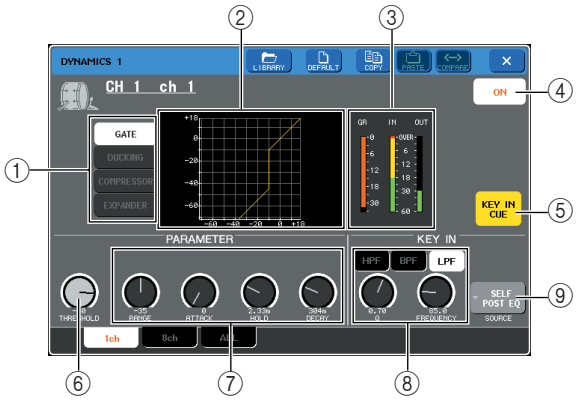

## 2 In the OVERVIEW screen, press the DYNAMICS 1/2 field to access the DYNAMICS 1 (2) popup window.

In the DYNAMICS 1 (2) popup window, you can edit the dynamics settings and turn the processor on/off.

There are three variations of this popup window; one-channel, eight-channel, and ALL. These windows include the following items.

### [DYNAMICS 1 (2) popup window (1ch)]

This window shows only the currently selected channel. All dynamics parameters can be viewed and edited. This is convenient when you want to make detailed dynamics settings for a specific channel.




### ① Dynamics type buttons

Use these buttons to select one of the following four types of dynamics.

- **Input channels**

| | |
|---|---|
| **DYNAMICS 1** | GATE |
| | DUCKING |
| | COMPRESSOR |
| | EXPANDER |
| **DYNAMICS 2** | COMPRESSOR |
| | COMPANDER-H (Hard compander) |
| | COMPANDER-S (Soft compander) |
| | DE-ESSER |

- **Output channels**

| | |
|---|---|
| **DYNAMICS 1** | COMPRESSOR |
| | EXPANDER |
| | COMPANDER-H (Hard compander) |
| | COMPANDER-S (Soft compander) |

HINT

- *For details on the dynamics parameters, refer to the supplementary material at the end of this manual. (→ p. 249)*

### ② Dynamics graph

This graph displays the approximate response of the dynamics processor.

### ③ Level meter

These meters show the amount of gain reduction (GR), and the peak levels before the gate (IN) and after the gate (OUT). If the signal clips, the OVER segment will light. If the corresponding channel is stereo (a ST IN channel, a MIX/MATRIX channel set to stereo, or the STEREO channel), level meters for two channels are displayed.

### ④ DYNAMICS ON/OFF button

Turns the dynamics on/off.

### ⑤ KEY IN CUE button (only for GATE and DUCKING)

This button cue-monitors the currently selected key-in signal.

HINT

- *Even if the Cue mode is set to MIX CUE (the mode in which all channels whose [CUE] key is on are mixed for monitoring), turning on the KEY IN CUE button will cause only the signal of the corresponding channel to be monitored. The [CUE] keys that had been turned on previously will be forcibly defeated.*

### ⑥ THRESHOLD knob

This specifies the threshold at which the dynamics will begin operating. You can use multifunction encoder 1 to control this.

### ⑦ Other parameters

The other parameters of the dynamics processor are shown here. The parameters displayed will depend on the dynamics type that is selected. You can use multifunction encoders to adjust these parameters.

HINT

- *For details on the parameters, refer to the supplementary material at the end of this manual. (→ p. 249)*

### ⑧ KEY IN FILTER button (only for GATE and DUCKING)

This field lets you apply a filter to the key-in signal. As the filter to use, choose either a HPF (high pass filter), BPF (band pass filter), or LPF (low pass filter). If all of these buttons are off, no filter will be applied.

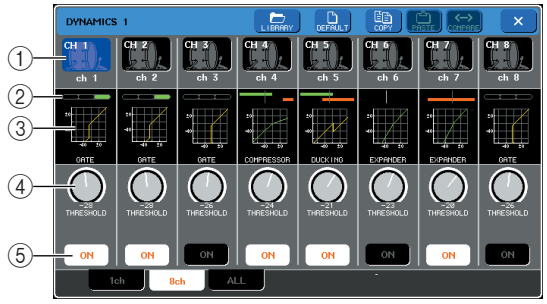
If a filter is enabled, you can use multifunction encoders 6/7 to adjust the Q and FREQUENCY (cutoff frequency / center frequency).

### ⑨ KEY IN SOURCE button

This displays the KEY IN SOURCE SELECT popup window, where you can select the key-in signal.

## [DYNAMICS 1 (2) popup window (8 ch)]

This window shows the settings for eight channels, including the currently selected channel. You can switch between eight-channel groups such as 1–8 and 9–16. Compared to the one-channel display, fewer parameters can be controlled. This window is convenient when you want to adjust the threshold or certain other parameters while watching the adjacent channels to the left and the right.




### ① Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. You can press these buttons to select a channel or a range of channels.

### ② GR meter / GAIN indicator

This indicates the amount of gain reduction. If you are using “GATE” as the dynamics type, an indicator showing the open/closed state of the gate is shown.

| Gate status indication | (red) | (yellow) | (green) | |
|---|---|---|---|---|
| On/off status | on | on | on | off |
| Open/closed status | close | open | open | – |
| Gain reduction amount | 30 dB or more | 0–30 dB | 0 dB | – |

### ③ Dynamics graph

This mini-graph displays the approximate response of the dynamics processor.

### ④ THRESHOLD knob

This specifies the threshold at which the dynamics processor will begin operating. You can use multifunction encoders 1–8 to control this.

### ⑤ DYNAMICS ON/OFF button

This turns the dynamics processor on/off.

## [DYNAMICS 1 (2) popup window (ALL)]

This window displays the dynamics settings of all input channels (or output channels) at once. This page is only for display, and does not allow the parameters to be edited. It is useful when you need to quickly check the dynamics settings for all channels, or when you want to copy/paste dynamics settings between distant channels.

### ① Channel select button

This indicates the channel number, the icon selected for that channel, and the channel name. You can press these buttons to select a channel or a range of channels.

### ② GR meter

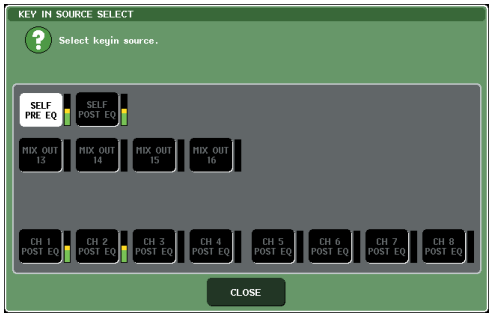
This indicates the amount of gain reduction. The level display is the same as for the eight-channel window. You can press the GR meter to switch to the one-channel popup window with that channel selected.

## 3 Access the DYNAMICS 1 (2) popup window (1 ch), and press the DYNAMICS ON button to enable the dynamics processor.

If you access the DYNAMICS 1 (2) popup window (1 ch), you’ll be able to edit all parameters.

## 4 To select a key-in signal, proceed as follows.

### 1 In the DYNAMICS 1 (2) popup window (1 ch), press the KEY IN SOURCE button to access the KEY IN SOURCE SELECT popup window.




### 2 Select one of the following as the key-in signal.

- **For an input channel**

| | |
|---|---|
| **SELF PRE EQ** | The pre-EQ (attenuator) signal of the currently selected input channel |
| **SELF POST EQ** | The post-EQ signal of the currently selected input channel |
| **CH 1–48 POST EQ, STIN 1L/1R–4L/4R POST EQ** | The post-EQ signal of the corresponding input channel (*1) |
| **MIX OUT 13–16** | The post-ON signal of the corresponding MIX channel |

*1 The selectable signals are limited to the group to which that channel belongs, from the seven groups CH 1–8, CH 9–16, CH 17–24, CH 25–32, CH 33–40, CH 41–48, and STIN 1L/1R–4 L/4 R.

- **For an output channel**

| | |
|---|---|
| **SELF PRE EQ** | The pre-EQ (attenuator) signal of the currently selected output channel |
| **SELF POST EQ** | The post-EQ signal of the currently selected output channel |
| **MIX 1–16 POST EQ, MTRX 1–8 POST EQ, ST L/R, MONO (C), POST EQ** | The post-EQ signal of the corresponding output channel (*2) |
| **MIX OUT 13–16** | The post-ON signal of the corresponding MIX channel |

*2 The selectable signals are limited to the group to which that channel belongs, from the four groups MIX 1–8, MIX 9–16, MATRIX 1–8, and ST/MONO (C).

### 3 Press the CLOSE button to close the popup window.

## 5 If you want to copy dynamics settings to another channel, or initialize the dynamics settings, use the tool buttons of the popup window.

For details on how to use these buttons, refer to "Using the tool buttons" (→ p. 35).

HINT

- *Dynamics settings can be saved/loaded at any time using the dedicated library (→ p. 35). Presets suitable for a variety of instruments or situations are also provided.*
- *You can also access the SELECTED CHANNEL VIEW screen, and use the encoders of the SELECTED CHANNEL section to edit the dynamics settings (→ p. 91).*
- *Even when the DYNAMICS 1 (2) popup window is displayed, you can use the encoders of the SELECTED CHANNEL section to control the dynamics.*

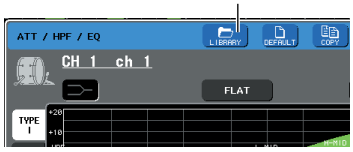
# Using the EQ or Dynamics libraries

You can use dedicated libraries to store and recall EQ and dynamics settings.

## EQ library

There is an “INPUT EQ LIBRARY” that lets you store/recall EQ settings for input channels, and an “OUTPUT EQ LIBRARY” that lets you store/recall EQ settings for output channels.
To recall settings from a library, press the LIBRARY tool button in the ATT/HPF/EQ popup window.

Library button




For details on using the library, refer to “Using libraries” (→ p. 35).

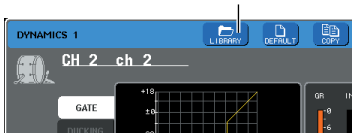
HINT

- *You can recall 199 different settings each from the input EQ library and from the output EQ library. 40 of the input library items are read-only presets, and 3 of the output library items are read-only presets.*
- *For details on how to access the ATT/HPF/EQ popup window, refer to “Using EQ” (→ p. 115).*

## Dynamics library

Use the “Dynamics Library” to store/recall dynamics settings. All of the M7CL’s dynamics processors use this dynamics library. (However, the available types will differ between an input channel’s Dynamics 1 and Dynamics 2, and an output channel’s Dynamics 1. Types that cannot be selected cannot be recalled.)
To recall an item from the dynamics library, press the LIBRARY tool button in the DYNAMICS 1 (2) popup window.

Library button




For details on using the library, refer to “Using libraries” (→ p. 35).

HINT

- *199 items can be recalled from the library. 41 of these are read-only presets.*
- *For details on how to access the DYNAMICS 1(2) popup window, refer to “Using dynamics” (→ p. 118).*

# ◆ Chapter 11 ◆
# Grouping and linking

This chapter explains the DCA Group and Mute Group functions that let you control the level or muting of multiple channels together, the Channel Link function that links the parameters of multiple channels, and the operations that let you copy or move parameters between channels.

## About DCA Groups and Mute Groups

The M7CL provides eight DCA groups and eight mute groups that let you control the level of multiple channels simultaneously.
DCA groups allow you to assign input channels to eight groups, so that the Centralogic section faders 1–8 can be used to control the level of all channels in each group. A single DCA fader will control the level of all input channels belonging to the same DCA group while maintaining the level difference between the channels. This provides a convenient way in which drum mics etc. can be grouped.
Mute groups allow you to use user-defined keys [1]–[12] to mute/unmute multiple channels in a single operation. You can use this to cut out multiple channels simultaneously. Mute groups 1–8 can be used with both input channels and output channels. Both types of channel can exist in the same group.



## Using DCA groups

This section explains how to assign input channels to the eight DCA groups and use the faders of the Centralogic section to control them.

### Assigning channels to a DCA group

To assign a channel to a DCA group, you can either select a specific DCA group first and then specify the channels to be assigned to the group, or you can select a specific channel and then specify the DCA group to which it should be assigned.

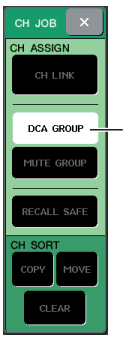
NOTE

- *DCA groups can be used only with input channels.*
- *DCA group settings are saved as part of the scene.*

#### ● Selecting the channels that will belong to a specific DCA group

**1 In the function access area, press the CH JOB button.**

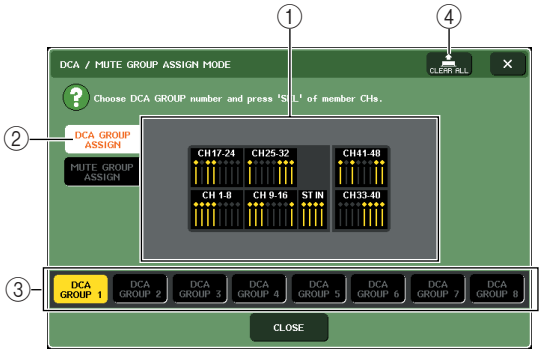
The CH JOB button lets you perform grouping, linking, and copying operations between channels. When you press this button, the function access area will change as follows.



DCA GROUP button

## 2 Press the DCA GROUP button to access the DCA/MUTE GROUP ASSIGN MODE popup window.

In the DCA/MUTE GROUP ASSIGN MODE popup window you can select the channels to be assigned to DCA groups. The popup window includes the following items.




### ① Channel display field

Channels assigned to the DCA group selected by the DCA GROUP 1–8 buttons (③) are highlighted in yellow.

### ② DCA GROUP ASSIGN button

Use this button to switch the mode in which you want to assign DCA groups.

### ③ DCA GROUP 1–8 buttons

Use these buttons to select the DCA group for which you want to make assignments.

### ④ CLEAR ALL button

Press this button to clear all channels that are assigned to the selected DCA group.

HINT

- *If the [DCA] key is selected in the NAVIGATION KEYS section, you can access the DCA/MUTE GROUP ASSIGN MODE popup window by pressing the Centralogic section [SEL] key twice in rapid succession. In this case, the DCA/MUTE GROUP ASSIGN MODE popup window will appear with the DCA GROUP 1–8 button selected for that DCA group.*

## 3 Use the DCA GROUP 1–8 buttons to select the DCA group to which you want to assign channels.

HINT

- *If the [DCA] key is selected in the NAVIGATION KEYS section, you can also select the assignment-destination DCA group by pressing a [SEL] key in the Centralogic section.*

## 4 Use the [SEL] keys of the INPUT section or ST IN section to select the channels you want to assign to the group (multiple selections are allowed).

The [SEL] keys of the assigned channels will light, and the corresponding channels will be highlighted in yellow in the channel display field of the window.

To cancel an assignment, press a lit [SEL] key once again to make it go dark.

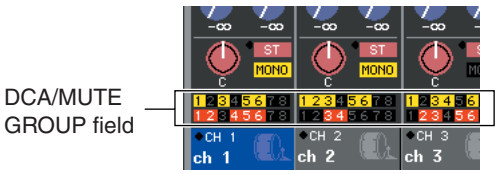
## 5 Assign channels to other DCA groups in the same way.

HINT

- *You may assign a single channel to more than one DCA group. In this case, the value will be the sum of the levels of all assigned DCA faders.*

## 6 When you finish making assignments, press the CLOSE button to close the popup window, and press the "×" symbol in the function access area (CH JOB display).

You will return to the previous screen. The DCA/MUTE GROUP field of the OVERVIEW screen indicates the DCA group(s) to which each channel is assigned. Numbers that are lit yellow in the upper line of this field indicate the DCA groups to which that channel belongs.




HINT

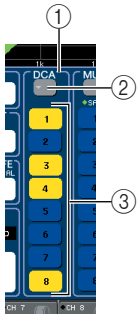
- *You can also access the DCA/MUTE GROUP ASSIGN MODE popup window by pressing the DCA/MUTE GROUP field in the OVERVIEW screen.*

## ● Selecting the DCA groups to which a specific channel will belong

## 1 Press a [SEL] key to select the input channel for which you want to make assignments.

## 2 Press any one of the encoders of the SELECTED CHANNEL section to access the SELECTED CHANNEL VIEW screen.

In this screen you can view all mix parameters for the currently selected channel.




### ① DCA field

Here you can make DCA group settings for the currently selected channel.

### ② Popup button

Press this button to open the DCA/MUTE GROUP ASSIGN MODE popup window. For details, refer to "Selecting the channels that will belong to a specific DCA group" (→ p. 123).

③ **DCA group select buttons 1–8**
These select the DCA group(s) to which the currently selected channel will be assigned.

**3** **Use the DCA group select buttons to select the DCA group(s) to which the currently selected channel will be assigned (multiple selections are allowed).**

**4** **Select the DCA group(s) for other channels in the same way.**

## Controlling DCA groups

Use the faders of the Centralogic section to control DCA groups.

**1** **Assign input channels to DCA groups.**

**2** **Using the faders of the top panel INPUT section or ST IN section, adjust the relative balance between the input channels belonging to the DCA group you want to use.**

**3** **In the NAVIGATION KEYS section, press the [DCA] key to make it light so that the Centralogic section will be controlling the DCA groups.**

**4** **Operate the Centralogic section fader corresponding to the DCA group you want to use.**

The level of the channels assigned to that DCA group will change while preserving the level differences you established in step 1.

NOTE

*• The input faders will not operate at this time.*

**5** **To switch a DCA group on/off, press the Centralogic section [ON] key for that DCA group.**

When you press a Centralogic section [ON] key to make it go dark, the channels assigned to that DCA group will be turned off (the same state as when the faders are lowered to the -∞ dB position).

**6** **To cue-monitor a DCA group, press the Centralogic section [CUE] key for that DCA group.**

When you press the Centralogic section [CUE] key to make it light, the [CUE] keys of the channels assigned to that DCA group will blink, and cue monitoring will be enabled. For more about cue, refer to “Using the Cue function” (→ p. 157).

# Using mute groups

This section explains how to assign channels to mute groups and use the user-defined keys to control them.

## Assigning channels to mute groups

To assign channel to mute groups, you can either select a specific mute group and then assign channels to that mute group, or you can select a specific channel and then specify the mute groups to which it will belong.

NOTE

- *To operate a mute group, you'll need to assign the desired channels to a mute group, and then assign MUTE MASTER to a user-defined key.*

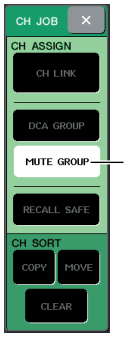
HINT

- *Mute groups can be used for both input channels and output channels. Both types of channel can exist in the same group.*
- *Mute group settings are saved as part of the scene.*

### ● Selecting the channels that will belong to a specific mute group

**1 In the function access area, press the CH JOB button.**

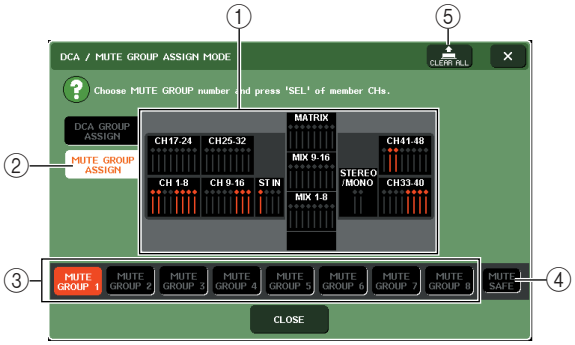
The function access area will change as follows.




MUTE GROUP button

**2 Press the MUTE GROUP button to access the DCA/MUTE GROUP ASSIGN MODE popup window.**

In this popup window you can select the channels that will be assigned to each mute group. The popup window includes the following items.




#### ① Channel display field

Channels assigned to the mute group selected by the MUTE GROUP 1–8 buttons are highlighted in red. If the MUTE SAFE button is selected, channels that are temporarily excluded from all mute groups are highlighted in green.

#### ② MUTE GROUP ASSIGN button

Use this button to switch the mode in which you want to assign mute groups.

#### ③ MUTE GROUP 1–8 buttons

These buttons select mute groups 1–8.

#### ④ MUTE SAFE button

Use this button when you want to temporarily exclude a specific channel from all mute groups. The channel display field shows the channels that are temporarily excluded from the mute groups. For more about mute safe, refer to "Using the Mute Safe function" (→ p. 129).

#### ⑤ CLEAR ALL button

You can press this button to clear the channels that are assigned to the mute groups.

**3 Use the MUTE GROUP 1–8 buttons to select the mute group to which you want to assign channels.**

**4 Press the [SEL] key of the input channels / output channels (you may select more than one) that you want to assign.**

The [SEL] keys of the assigned channels will light, and the corresponding channels will be highlighted in red in the channel display field of the window. To cancel an assignment, press a lit [SEL] key once again to make it go dark.

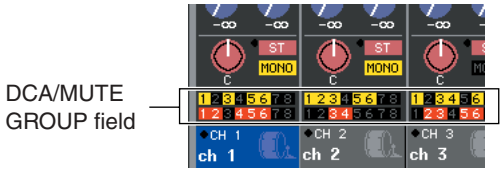
**5 Assign channels to other mute groups in the same way.**

HINT

- *You are free to assign a single channel to more than one mute group.*

**6 When you finish making assignments, press the CLOSE button to close the popup window, and press the "×" symbol in the function access area (CH JOB display).**

You will return to the previous screen. The DCA/MUTE GROUP field of the OVERVIEW screen indicates the mute group(s) to which each channel is assigned. Numbers that are lit red in the lower line of this field indicate the mute groups to which that channel belongs.

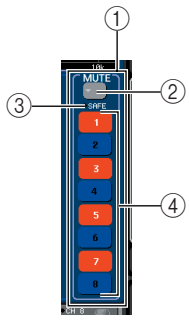



### ● Selecting the mute groups to which a specific channel will belong

**1 Press the [SEL] key of the input channel / output channel that you want to assign.**

**2 Press any one of the encoders of the SELECTED CHANNEL section to access the SELECTED CHANNEL VIEW screen.**

In this screen you can view the mix parameters for the currently selected channel.




**① MUTE field**

Here you can make mute group settings for the currently selected channel.

**② Popup button**

Press this button to open the DCA/MUTE GROUP ASSIGN MODE popup window. For details, refer to "Selecting the channels assigned to a specific mute group."

**③ MUTE SAFE indicator**

This will light if the currently selected channel is set to Mute Safe. For more about mute safe, refer to "Using the Mute Safe function" (→ p. 129).

**④ Mute group select buttons 1–8**

These select the mute group(s) to which the currently selected channel will be assigned.

**3 Use the mute group select buttons to select the mute group(s) to which the currently selected channel will be assigned (multiple selections are allowed).**

**4 Select the mute group(s) for other channels in the same way.**

## Controlling mute groups

To use mute groups, you must first assign the Mute On/Off function for a mute group 1–8 to a user-defined key, and then operate that user-defined key.

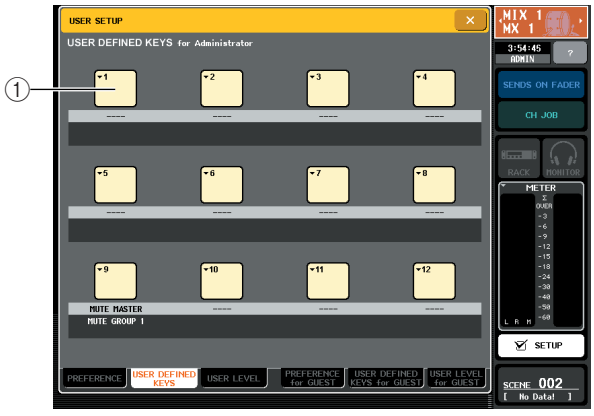
**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the upper left of the screen, press the USER SETUP button to access the USER SETUP popup window.**

This popup window lets you limit the functionality that can be used by the user, and also lets you make system-wide settings. This window includes several pages, which you can switch between using the tabs located at the bottom of the window.

**3 Press the USER DEFINED KEYS tab to select the USER DEFINED KEYS page.**

The USER DEFINED KEYS page lets you assign functions to user defined keys [1]–[12].



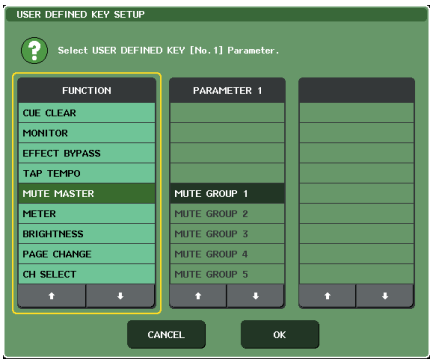

**① User defined keys popup buttons**

**4 Press the popup button for the user-defined key to which you want to assign the mute on/off function.**

The USER DEFINED KEY SETUP popup window will appear.

**5 Choose "MUTE MASTER" in the FUNCTION column, and choose "MUTE GROUP x" (where "x" is the mute group number) in the PARAMETER 1 column. Then press the OK button.**

To select an item in each column, use ↑/↓ buttons or the multifunction encoders. When you press the OK button, the Mute On/Off function for the specified mute group will be assigned to the user-defined key you selected in step 4, and you will return to the USER DEFINED KEYS page.




HINT

- *For more about user-defined keys, refer to "User-defined keys" (→ p. 216).*

**6 In the same way, assign the Mute On/Off function for another mute group to a different user-defined key.**

**7 When you have finished assigning functions to user-defined keys, press the "×" symbol to close the USER DEFINED KEYS page.**

**8 In the function access area, press the SETUP button to close the SETUP screen.**

**9 To mute a mute group, press the user-defined key [1]–[12] that's assigned to the desired mute group.**

The LED of the user-defined key will light, and all channels belonging to the selected mute group will be muted. At this time, the [ON] key of the muted channels will blink. You can turn on more than one user-defined key to mute multiple mute groups.

**10 To defeat muting of a mute group, press the user-defined key that you lit in step 9.**

HINT

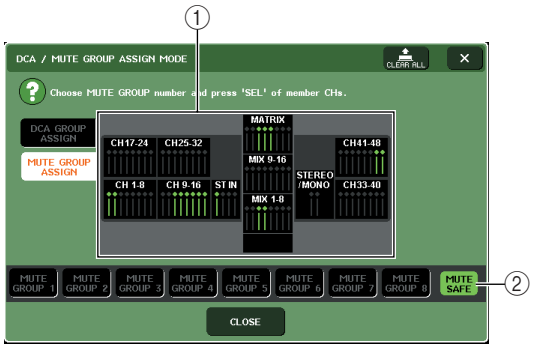
- *Even if a channel is assigned to a mute group, it will not be affected by operations of the user-defined key if the [ON] key of that channel is already turned off to begin with.*
- *If you cancel the assignment of the user-defined key, that mute group will be forcibly set to the unmuted state. If, after synchronizing with M7CL Editor, the system goes offline, mute groups not assigned to user-defined keys will forcibly be un-muted.*

## Using the Mute Safe function

If necessary, specific channels belonging to a mute group can be temporarily excluded from mute group operations (Mute Safe).

**1 In the function access area, press the CH JOB button.**

**2 Press the MUTE GROUP button to access the DCA/MUTE GROUP ASSIGN MODE popup window.**




**① Channel display field**

When the MUTE SAFE button is on, channels that are temporarily excluded from the mute group are highlighted in this field.

**② MUTE SAFE button**

This lets you select the channels that will be set to Mute Safe status.

**3 Press the MUTE SAFE button.**

**4 Press a [SEL] key to select the channel(s) you want to exclude from mute groups (multiple selections are allowed).**

The [SEL] key will light, and the corresponding channel in the channel display field of the window will be highlighted in green. You can cancel the Mute Safe status by pressing a lit [SEL] key once again to make it go dark.

Channels that are set to Mute Safe will not be affected when you mute a mute group to which that channel belongs.

HINT

- *Mute Safe settings are not saved in the scene. They will remain valid until you cancel the settings.*

# The Channel Link function

Channel Link is a function that links the operation of parameters such as fader and EQ between input channels.
The parameters to be linked can be selected from the following choices.

- Head amp settings
- EQ settings
- Dynamics 1 and 2 settings
- On/off status of signals sent to MIX buses
- Send levels of signals sent to MIX buses
- On/off status of signals sent to MATRIX buses
- Send levels of signals sent to MATRIX buses
- Fader operations
- [ON] key operations

Two or more input channels that are linked are called a “link group.” There is no limit on the number of link groups you can create, or on the number and combinations of input channels that can be included in these link groups. However, the types of parameters that are linked will be the same for all link groups.

## Linking the desired input channels

Here’s how to link specific parameters of input channels.

HINT

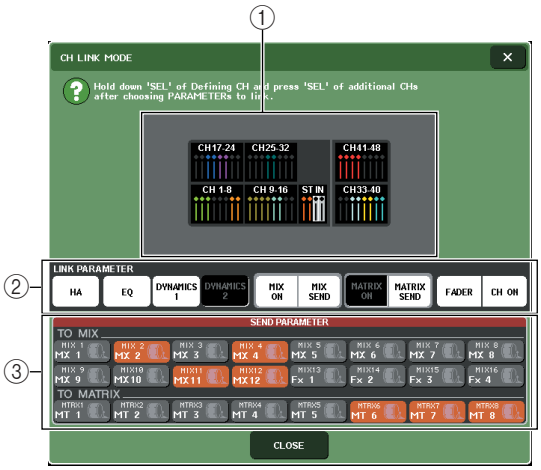
- *Channel link settings are saved as part of the scene.*
- *Recall Safe does not affect channel link. When you recall a scene, the link status will always be reproduced.*

### 1 In the function access area, press the CH JOB button.

CH LINK button

### 2 Press the CH LINK button to open the CH LINK MODE popup window.

In this popup window you can view the channels that are linked and specify the parameters that will be linked. The window includes the following items.




#### ① Channel display field

When you create a link group, the corresponding channels will be highlighted. If there are two or more link groups, each group is shown in a different color.

HINT

- *All parameters of ST IN channel L/R are always linked.*

#### ② LINK PARAMETER field

Use the buttons in this field to select the parameters that you want to be linked. These settings are shared by all link groups.

#### ③ SEND PARAMETER field

If you have turned on the MIX ON, MIX SEND, MATRIX ON, or MATRIX send buttons in the LINK PARAMETER field, use the buttons of this field to specify the send-destination bus(es).

### 3 Use the buttons of the LINK PARAMETER field to select the parameter(s) that will be linked (multiple selections are allowed).

The table below lists the parameters you can select in the LINK PARAMETER field.

| | |
|---|---|
| **HA button** | Head amp settings |
| **EQ button** | EQ settings (including ATT/HPF) |
| **DYNAMICS 1, 2 button** | Dynamics 1 and 2 settings |
| **MIX ON button** | On/off status of signals sent to MIX buses |
| **MIX SEND button** | Send levels of signals sent to MIX buses |
| **MATRIX ON button** | On/off status of signals sent to MATRIX buses |
| **MATRIX SEND button** | Send levels of signals sent to MATRIX buses |
| **FADER button** | Fader operations |
| **CH ON button** | [ON] key operations |

HINT

- *If you link Dynamic 1 and 2 for two or more input channels, the parameter values will be linked, but the key-in signals are not linked. For more about dynamics, refer to "Using dynamics" (→ p. 118).*
- *If you turn on the EQ button or DYNAMICS 1, 2 button, library recall operations will also be linked.*
- *The HA gain setting and the fader operation will be linked and will maintain the same relative level difference between the channels.*

### 4 If you turned on the MIX ON, MIX SEND, MATRIX ON, or MATRIX send buttons in step 3, use the buttons of the SEND PARAMETER field to specify the bus(es) for which you want operations to be linked (multiple selections are allowed).

The table below lists the parameters you can select in the SEND PARAMETER field.

| | |
|---|---|
| **MX 1–16 buttons** | MIX buses 1–16 |
| **MT 1–8 buttons** | MATRIX buses 1–8 |

NOTE

- *If nothing is selected in the SEND PARAMETER field, send on/off and send level will not be linked.*

### 5 To link channels, hold down the [SEL] key of the link-source input channel and press the [SEL] key of the link-destination channel.

At this time, the values of the parameters you selected in steps 3 and 4 will be copied from the link-source to the link-destination channel. Subsequent operations of the parameters you selected in steps 3 and 4 will be linked between channels belonging to the same link group.

The current link status is shown in the channel display field of the window.

HINT

- *If you want to link three or more channels, hold down the link-source [SEL] key and successively press the [SEL] key of each channel you want to add to the link group.*
- *When you press the [SEL] key of a channel belonging to a link group to make it light, the [SEL] keys of all channels belonging to the same link group will blink.*
- *If you link an INPUT channel to a ST IN channel, parameters that do not exist for a ST IN channel will be ignored.*

### 6 If you want to add a new channel to an existing link group, hold down any [SEL] key within the group and press the [SEL] key that you want to add to the group.

HINT

- *If the link-destination channel is already assigned to another link group, its assignment to the previous group will be cancelled, and it will be added to the newly assigned group.*

### 7 To remove a channel from a link group, hold down any [SEL] key in the same link group, and press the [SEL] key of the channel that you want to remove.

HINT

- *You can also remove all linked channels from the same link group temporarily if you want to edit parameters that are linked to each other while maintaining the same relative level differences, such as the HA gain and fader (for example, if you want to change the level balance between channels that belong to the same link group). While pressing and holding down the [SEL] key for the desired linked channel, change the parameter value. While you are holding down the [SEL] key, the HA gain and fader values will not be linked. (However you cannot temporarily cancel this link during the "fading" phase of the recalled scene.)*

# Copying, moving, or initializing a channel

You can copy or move mix parameters between channels, or restore the parameters of a specific channel to their default settings.

## Copying the parameters of a channel

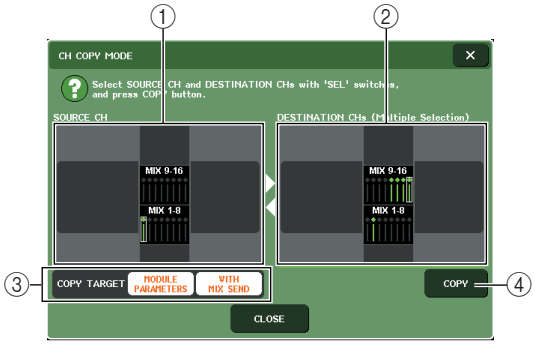
You can copy the mix parameter settings of a channel to another channel. When you execute the copy operation, the settings will overwrite the parameters of the copy-destination.
You can copy between the following combinations of channels.

- Between input channels
- Between the STEREO L/R channel and MONO channel
- Between MIX channels
- Between MATRIX channels

### 1 In the function access area, press the CH JOB button to access the CH JOB menu.

### 2 Press the COPY button to access the CH COPY MODE popup window.

This popup window lets you copy channel settings. The window contains the following items.




#### ① SOURCE CH field

Indicates the channel that is selected as the copy-source. You can press this field to cancel the channel that is shown.

#### ② DESTINATION CHs field

Indicates the channel that is selected as the copy-destination. You can press this field to cancel the channel that is shown.

#### ③ COPY TARGET field

If you've selected a MIX channel, MATRIX channel, or STEREO/MONO channel as the copy-source, use the buttons of this field to select the parameters that will be copied. You may turn both buttons on if desired.

If both buttons are on, the following parameters will be copied.

- **MODULE PARAMETERS button**
  ..... All parameters of the copy-source channel
- **SENDS button**
  ..... On/off status and send level settings of the send signals sent to the copy-source channel

#### ④ COPY

Executes the copy.

### 3 To select the copy-source channel, press the corresponding [SEL] key to make it light.

The corresponding channel is highlighted in the SOURCE CH field of the window.

When you choose the copy-source channel, the DESTINATION CHs field is automatically emboldened, allowing you to select the copy-destination.

If you want to re-select the copy-source channel, press the SOURCE CH field.

NOTE

*• Copy settings can be made only in the order of "copy-source" → "copy-destination."*

### 4 To select the copy-destination channel(s), press the corresponding [SEL] key to make it light (multiple selections are allowed).

The corresponding channel(s) is/are highlighted in the DESTINATION CHs field of the window. The channels that can be selected will depend on the channel you selected in step 3.

If you want to defeat all of the selected copy-destination channels, press the DESTINATION CHs field.

### 5 If you selected a MIX/MATRIX channel as the copy-source, use the buttons of the COPY TARGET field to select the parameters you want to copy.

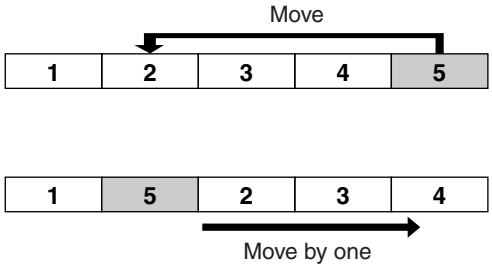
### 6 To execute the copy, press the COPY button.

The copy will be executed, and the settings will overwrite the parameters of the copy-destination channel(s). After the copy has been executed, the SOURCE CH field and DESTINATION CHs field will return to an unset state.

### 7 To close the CH COPY MODE popup window, press the CLOSE button.

## Moving the parameters of a channel

The settings of a specific input channel can be moved to a different input channel. When you execute a Move operation, the numbering of the channels between the move-source and move-destination will move forward or backward by one.



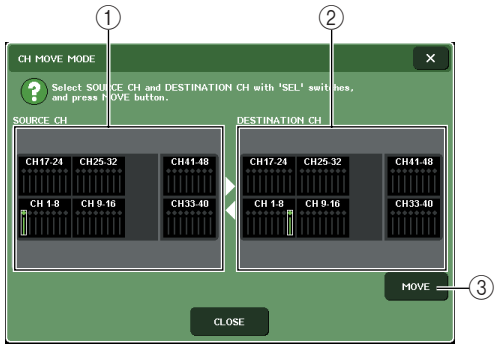

You can move settings between the following combinations of channels.

- Between INPUT channels
- Between ST IN channels

### 1 In the function access area, press the CH JOB button to access the CH JOB menu.

### 2 Press the MOVE button to access the CH MOVE MODE popup window.

This popup window lets you move channel settings.




**① SOURCE CH field**

This indicates the move-source channel. You can press this field to cancel the channel that is shown.

**② DESTINATION CH field**

This indicates the move-destination channel. You can press this field to cancel the channel that is shown.

**③ MOVE**

Executes the move.

### 3 To select the move-source channel, press the corresponding [SEL] key to make it light.

The corresponding channel is highlighted in the SOURCE CH field of the window.

When you select the move-source channel, the DESTINATION CH field will automatically be emboldened, allowing you to select the move-destination.

If you want to re-select the move-source channel, press the SOURCE CH field.

NOTE

*• Settings for the Move operation can be made only in the order of "move-source" → "move-destination."*

### 4 To select the move-destination channel, press the corresponding [SEL] key to make it light.

The corresponding channel is highlighted in the DESTINATION CH field of the window. The channels that can be selected will depend on the channel you selected in step 3.

If you want to defeat the selected move-destination channel, press the DESTINATION CH field.

### 5 To execute the move, press the MOVE button.

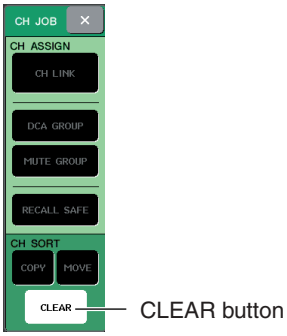
The settings of all channels between the move-source and move-destination will shift toward the move-source by one channel, and the channel settings will move from the move-source to the move-destination. When the Move has been executed, the SOURCE CH field and DESTINATION CH field will return to an un-set state.

### 6 To close the CH MOVE MODE popup window, press the CLOSE button.

## Initializing the parameters of a channel

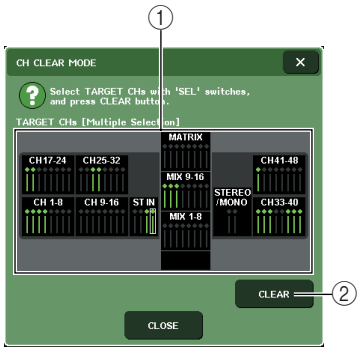
If desired, you can restore the parameters of a channel to an initialized state. This operation can be performed on any channel(s).

**1 In the function access area, press the CH JOB button to access the CH JOB menu.**




**2 Press the CLEAR button to access the CH CLEAR MODE popup window.**

This popup window lets you initialize parameters.




**① TARGET CHs field**

In this field, select the channel(s) that you want to initialize. You can press this field to cancel the selected channel.

**② CLEAR**

Executes the initialization.

**3 To select the channel(s) to be initialized, press the corresponding [SEL] key to make it light (multiple selections are allowed).**

The corresponding channel(s) is/are highlighted in the TARGET CHs field of the window.

If you want to de-select all of the selected channels, press the TARGET CHs field.

**4 To execute the initialization, press the CLEAR button.**

The parameters of the selected channel(s) will be initialized.

After initialization, the TARGET CHs field will return to a state in which nothing is selected.

**5 To close the CH CLEAR MODE popup window, press the CLOSE button.**

# ◆ Chapter 12 ◆
# Scene memory

This chapter explains how to perform scene memory operations.

## About scene memories

On the M7CL, the mix parameter settings and input/output port patching can be assigned a name and stored into memory (and later recalled from memory) as a “scene.”
Each scene is assigned a number in the range of 000–300. Scene 000 is a read-only scene used for initializing the mix parameters, and scenes 001–300 are writable scenes.
Each scene contains the position of the top panel faders and [ON] keys, as well as the following parameters.

- Input/output port patching
- Bus settings
- Head amp settings
- EQ settings
- Dynamics 1 and 2 settings
- Rack (GEQ/effect) settings
- Pan/balance settings
- Insert/direct out settings
- On/off status and send level of signals sent to MIX buses
- On/off status and send level of signals sent to MATRIX buses
- DCA group settings
- Mute group settings
- Channel link settings



## Using scene memories

This section explains how to store and recall the M7CL’s mix parameters as “scenes.”

### Storing a scene

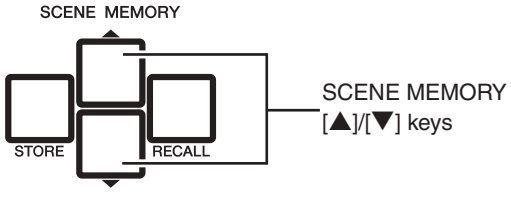
To store the current mix settings as a scene memory, you can either use the keys of the top panel SCENE MEMORY/MONITOR section, or use the SCENE LIST window.

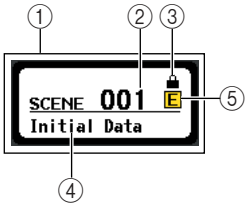
#### ● Using the keys of the SCENE MEMORY/ MONITOR section

**1 Use the pad controls of the top panel or the buttons in the touch screen to set the mix parameters as desired.**

**2 Use the SCENE MEMORY [▲]/[▼] keys to select the store-destination scene number.**

The number of the currently selected scene is shown in the SCENE field of the function access area. When you select a new scene number, the number will blink. This blinking indicates that the displayed scene number is different than the currently-loaded scene number.






### ① SCENE field

This field always displays general information about the scene. You can press this field to access the SCENE LIST window, where you can view and edit more detailed settings for the scene.

### ② Scene number

This indicates the number of the currently selected scene.

### ③ R symbol (READ ONLY symbol) / Protect symbol

Read-only scenes are indicated by an R symbol (Read-only symbol) displayed here. Write-protected scenes are indicated by a Protect symbol.

### ④ Scene title

This displays the title of the currently selected scene.

### ⑤ E symbol (EDIT symbol)

This symbol will appear when you edit the mix parameters of the currently-loaded scene. This symbol indicates that you must execute the Store operation if you want to keep the changes you made.

HINT

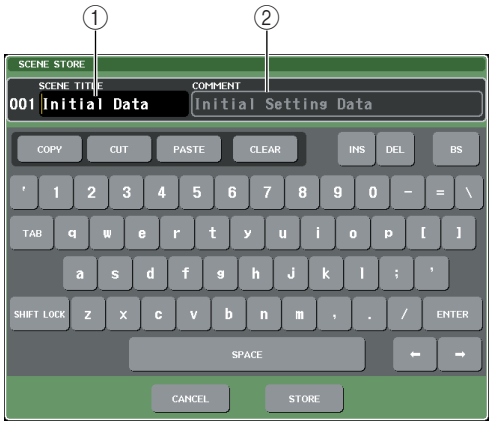
- *If you hold down either of the SCENE MEMORY [▲]/[▼] keys, the scene number will change consecutively.*
- *If you press the SCENE MEMORY [▲]/[▼] keys simultaneously, the SCENE field indication will return to the number of the currently-loaded scene.*

NOTE

- *You cannot Store to a scene number for which the Protect symbol or R symbol is displayed.*

## 3 Press the SCENE MEMORY [STORE] key.

The SCENE STORE popup window will appear, allowing you to assign a title or comment to the scene.




### ① SCENE TITLE field

Press this field to select it, and enter a title for the scene (maximum 16 characters).

### ② COMMENT field

Press this field to select it, and enter a comment for the scene. You can use this as a memorandum for each scene (maximum 32 characters).

HINT

- *The title and comment can be edited later (→ p. 140).*

## 4 Assign a title or comment to the scene as desired.

For details on entering text, refer to “Entering names” (→ p. 34).

## 5 Press the SCENE MEMORY [STORE] key or the STORE button located in the lower part of the SCENE STORE popup window.

The SCENE STORE popup window will close, and a dialog box will ask you to confirm the Store operation.

## 6 To execute the Store operation, press the OK button.

The current mix settings will be stored to the scene number you selected in step 2. When storing is completed, the scene number in the function access area will stop blinking. If you decide to cancel the Store operation, press the CANCEL button instead of the OK button.

HINT

- *You have the option of making settings so that the Store Confirmation dialog box does not appear (→ p. 214). In this case, pressing the SCENE MEMORY [STORE] key once will display the SCENE STORE popup window as usual, and pressing it once again will execute the Store operation. Alternatively, you can rapidly press the SCENE MEMORY [STORE] key twice to store without seeing the SCENE STORE popup window.*

NOTE

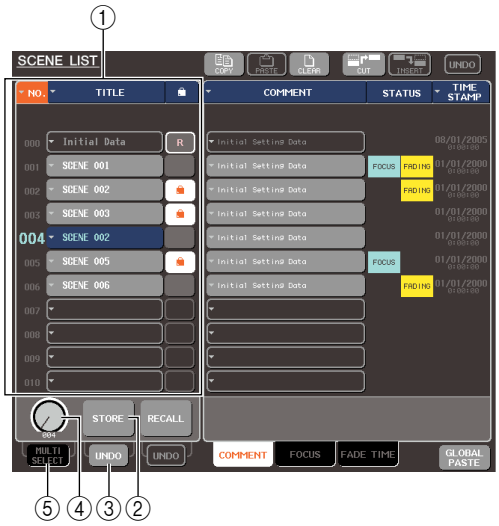
- *If you store to a scene number in which a scene is already stored, the previous data will be overwritten. It is possible to cancel a scene store operation immediately after overwriting a scene (→ p. 138).*

## ● Using the SCENE LIST window

### 1 Use the pad controls of the top panel or the buttons in the touch screen to set the mix parameters as desired.

### 2 Press the SCENE field in the function access area.

The SCENE LIST window will appear, where you can perform various scene-related operations. The window includes the following items.




#### ① Scene list

This list shows the scenes that are stored in scene memory. The row highlighted in blue indicates that this scene number is selected for operations. A read-only scene is indicated by the R symbol, and a write-protected scene is indicated by the protect symbol.

#### ② STORE button

This stores the current mix settings into the location currently selected in the scene list.

#### ③ STORE UNDO button

This button cancels (Undo) or re-executes (Redo) the most recently performed scene Store operation. This button is valid only immediately after you've performed an overwrite-store.

#### ④ Scene select knob

This knob lets you rapidly select the desired scene number. You can use any of the multifunction encoders to operate this knob. In addition, you can select multiple scenes by pressing the multifunction encoder while you turn it.

#### ⑤ MULTI SELECT button

You can select multiple scenes by switching this button on and turning the multifunction encoder. (This is the same result as pressing the scene select knob while turning it.)

### 3 Turn one of the multifunction encoders to select the store-destination scene number.

HINT

- *You can select multiple scene numbers as the store-destination. To do so, turn the MULTI SELECT button on and turn a multifunction encoder, or press the multifunction encoder while you turn it.*
- *If you selected multiple scenes as the store-destination, the same contents will be stored in all scene numbers. This is convenient when you want to create several variations of the same mix settings.*
- *You can also use the SCENE MEMORY [▲]/[▼] keys to select scene numbers.*

NOTE

- *Note that you can't use the STORE UNDO button if you've stored to multiple scenes simultaneously.*

### 4 Press the STORE button.

The SCENE STORE popup window will appear, allowing you to assign a title or comment to the scene.

### 5 Assign a title or comment to the scene as desired.

For details on entering text, refer to "Entering names" (→ p. 34).

### 6 Press the STORE button located at the bottom of the SCENE STORE popup window.

The SCENE STORE popup window will close, and a dialog box will ask you to confirm the Store operation.

### 7 To execute the Store operation, press the OK button.

The current mix settings will be stored to the scene number you selected in step 3. If you decide to cancel the Store operation, press the CANCEL button instead of the OK button.

### 8 If you want to cancel a scene overwrite-store operation, press the STORE UNDO button.

Immediately after overwrite-storing a scene, you can use the STORE UNDO button to undo (cancel) the most recently executed scene store operation. When you press the STORE UNDO button, a dialog box will ask you to confirm the Undo operation. Press the OK button if you want to execute the Undo. After executing the Undo, you can press the STORE UNDO button once again to Redo (re-execute) the store operation.

NOTE

- *The STORE UNDO button is available only immediately after overwrite-storing.*

HINT

- *You can also assign the same function as the STORE UNDO button to a user-defined key. (→ p. 216)*

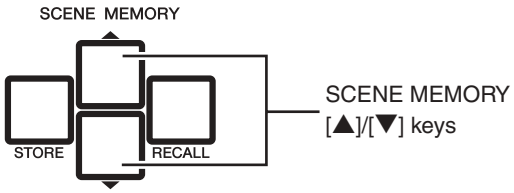
# Recalling a scene

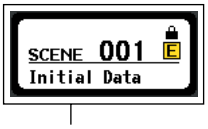
Here's how to recall a stored scene from scene memory. You can recall a scene either by using the keys of the top panel SCENE MEMORY / MONITOR section, or by using the SCENE LIST window.

## ● Using the keys of the SCENE MEMORY/ MONITOR section

### 1 Use the SCENE MEMORY [▲]/[▼] keys to select the scene number that you want to recall.

The number of the currently selected scene is shown in the SCENE field of the function access area.




SCENE field

### 2 Press the SCENE MEMORY [RECALL] key.

A dialog box will ask you to confirm the Recall operation.

### 3 To execute the Recall operation, press the OK button.

The scene you selected in step 1 will be recalled. If you decide to cancel the Recall operation, press the CANCEL button instead of the OK button.

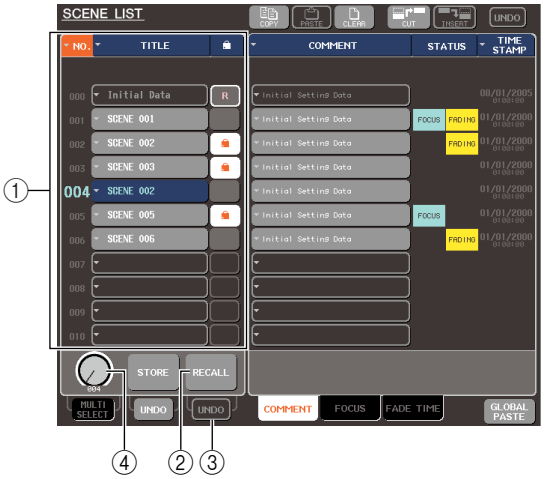
HINT

- *You have the option of making settings so that the Recall Confirmation dialog box does not appear in step 2 (→ p. 214).*

## ● Using the SCENE LIST window

### 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear, where you can perform various operations for scene memory.




#### ① Scene list

This list shows the scenes that are stored in scene memory. The row highlighted in blue indicates that this scene number is selected for operations.

#### ② RECALL button

This recalls the scene that is currently selected in the scene list.

#### ③ RECALL UNDO button

This button cancels (Undo) or re-executes (Redo) the most recently performed scene Recall operation.

#### ④ Scene select knob

This knob lets you rapidly select the desired scene number. You can use any of the multifunction encoders to operate this knob.

### 2 Turn one of the multifunction encoders to select the recall-source scene number.

HINT

- *You can also use the SCENE MEMORY [▲]/[▼] keys to select scene numbers.*

### 3 Press the RECALL button.

A dialog box will ask you to confirm the Recall operation.

### 4 To execute the Recall operation, press the OK button.

The scene you selected in step 2 will be recalled. If you decide to cancel the Recall operation, press the CANCEL button instead of the OK button.

### 5 If you want to cancel the scene Recall, press the RECALL UNDO button.

A dialog box asking you to confirm the Undo operation will appear; press the OK button if you want to execute the operation. After undoing, you can press the STORE UNDO button once again to Redo (re-execute).

HINT

- *You can also assign the same function as the RECALL UNDO button to a user-defined key. (→ p. 216)*
- *You can also use MIDI messages (program changes) to recall scenes. (→ p. 200)*

## Using user-defined keys to recall

You can use the user-defined keys to directly recall a selected scene with a single keystroke, or to step through the scenes.
To do this, you must first assign a scene recall operation to a user-defined key. The following recall operations can be assigned to a user-defined key.

- **INC RECALL**

  .....Immediately recalls the scene of the number that follows the currently loaded scene.

- **DEC RECALL**

  .....Immediately recalls the scene of the number that precedes the currently loaded scene.

HINT

- *If no scene is stored in the number that precedes or follows the currently loaded scene, the closest scene number in which a scene is stored will be recalled.*

- **DIRECT RECALL**.

  .....Directly recalls the scene number that you assigned to the user-defined key. When you press a user-defined key to which this function is assigned, the assigned scene will be recalled immediately.

To assign one of these functions to a user-defined key so that a scene can be recalled in a single keystroke, proceed as follows.

### 1 In the function access area, press the SETUP button to access the SETUP screen.

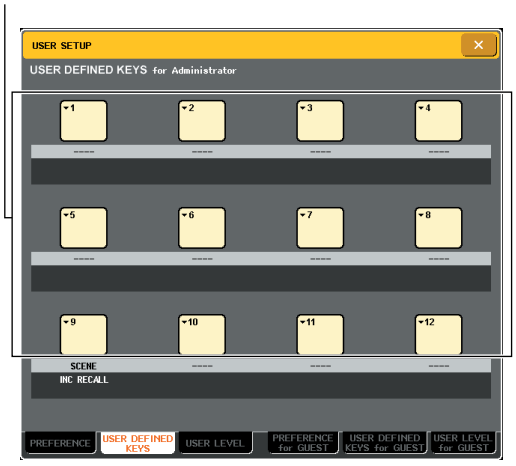
### 2 In the upper left of the screen, press the USER SETUP button to access the USER SETUP popup window.

This window includes several pages, which you can switch between using the tabs located at the bottom of the window.

### 3 Press the USER DEFINED KEYS tab to select the USER DEFINED KEYS page.

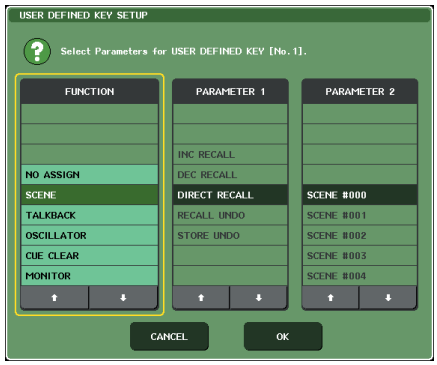
The USER DEFINED KEYS page lets you assign functions to user defined keys [1]–[12].

User defined keys popup buttons




### 4 Press the popup button for the user-defined key to which you want to assign a function.

The USER DEFINED KEY SETUP popup window will appear.




### 5 In the FUNCTION row, select "SCENE."

Proceed as follows, depending on the function you want to assign.

- **To assign INC RECALL or DEC RECALL**
  Choose "INC RECALL" or "DEC RECALL" in the PARAMETER 1 column.

- **To assign DIRECT RECALL**
  Choose "DIRECT RECALL" in the PARAMETER 1 column, and choose "SCENE #xxx" (xxx is the scene number) in the PARAMETER 2 column.

### 6 When you've finished making settings, press the OK button to close the popup window.

If desired, assign scene-recall functions to other user-defined keys in the same way.

### 7 Press the user-defined key to which you assigned a recall function.

The corresponding scene will be recalled.

# Editing scene memories

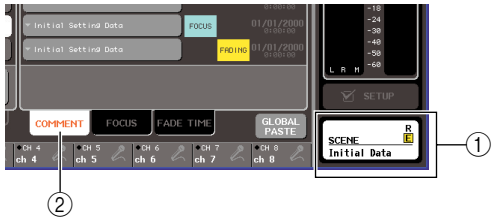
This section explains how to sort the scenes stored in scene memory, edit their titles, and copy/paste them.

## Sorting and renaming scene memories

You can use a dedicated window to sort scene memories in alphabetical order of their titles or in order of the date on which they were created. You can also edit their titles.

### 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear, where you can perform various operations for scene memory. You can use tabs to switch the right half of the SCENE LIST window between three different fields.

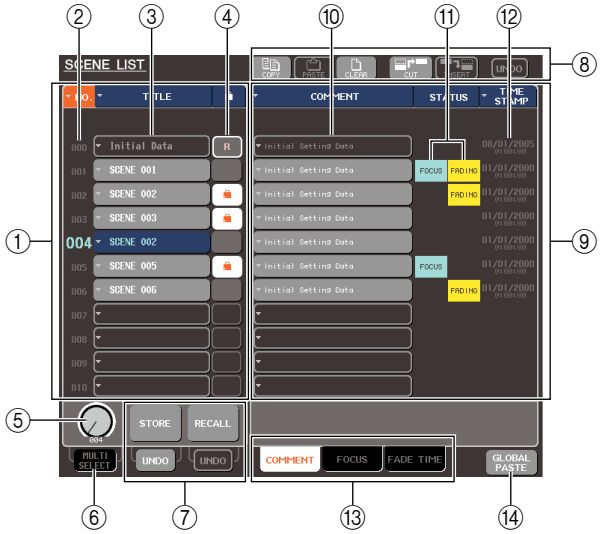



① **SCENE field**

② **COMMENT field**

### 2 Press the COMMENT tab at the bottom of the SCENE LIST window.

The COMMENT field will appear in the right half of the SCENE LIST window.




① **Scene list**

This lists the scenes that are stored in scene memory. The line highlighted in blue indicates the scene currently selected for operations.

HINT

- *To change the default setting for the way in which the list is sorted (ascending or descending order of scene number), access the USER SETUP popup window PREFERENCE tab, and change the "LIST ORDER." (→ p. 214)*

② **Scene number**

This is the scene number 000–300. You can also press this scene number to select a scene.

③ **TITLE**

This is the name assigned to each scene (maximum 16 characters). You can press this area to access the SCENE STORE popup window, where you can assign a title or comment to the scene.

④ **R symbol (READ ONLY symbol) / Protect symbol**

A read-only scene is indicated by the R symbol, and a write-protected scene is indicated by the protect symbol. By pressing this area for scenes 001–300, you can switch between protected and un-protected settings.

⑤ **Scene select knob**

This knob selects a scene number shown in the scene list. You can use any of the multifunction encoders to operate this knob.

In addition, you can select multiple scenes by pressing the multifunction encoder while you turn it.

⑥ **MULTI SELECT button**

You can select multiple scenes by switching this button on and turning the multifunction encoder. (This is the same result as pressing the scene select knob while turning it.)

⑦ **Store/Recall buttons**

These buttons are used to store/recall scenes. You can also undo (cancel) or redo (re-execute) store/recall operations. For details, refer to "Using scene memories" (→ p. 135).

⑧ **Tool buttons**

Use these buttons to perform operations such as Copy and Paste on the scenes stored in scene memory. For details, refer to "Scene memory editing" (→ p. 142).

⑨ **COMMENT field**

Here you can assign a comment to each scene, and view the status of the Focus function or Fade function settings.

⑩ **Comment**

This is the comment assigned to each scene (maximum 32 characters). You can press this area to access the SCENE STORE popup window, where you can assign a title or comment to the scene.

### ⑪ STATUS field
This field indicates the status of each scene. For scenes for which something other than the ALL button is selected in the Focus function (→ p. 147), and for scenes in which the Fade function is enabled (→ p. 151), the "FOCUS" and "FADING" indications will respectively be lit.

### ⑫ Time stamp
This indicates the date and time at which the scene was last stored, as the year/month/date and hours/minutes/seconds.

### ⑬ Field select tabs
These tabs switch the fields that are shown in the right half of the SCENE LIST window. For details on the Focus field refer to "Using the Focus function" (→ p. 147), and on the Fade Time field refer to "Using the Fade function" (→ p. 151).

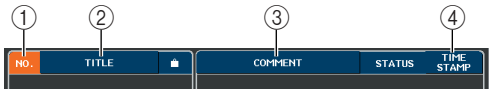
### ⑭ GLOBAL PASTE button
This button opens the GLOBAL PASTE window. For details on using the GLOBAL PASTE window, refer to "Using the Global Paste" (→ p. 145).

## 3 To select a scene number, turn any of the multifunction encoders on the top panel.
The line highlighted in blue in the scene list indicates the scene currently selected for operations.

HINT

- *You can also use the SCENE MEMORY [▲]/[▼] keys to select scene numbers.*
- *The operation that occurs when you press the SCENE MEMORY [▲]/[▼] keys (whether the number will move up/down, or the list itself will move up/down) can be specified in the PREFERENCE screen SCENE UP/DOWN field.*

## 4 To sort the list, press one of the column headers "NO.", "TITLE," "COMMENT," or "TIME STAMP" at the top of the scene list and COMMENT field.
The list will be sorted as follows, according to the location you pressed.




### ① NO.
Sorted in order of scene number.

### ② TITLE
Sorted in numeric/alphabetical order of title.

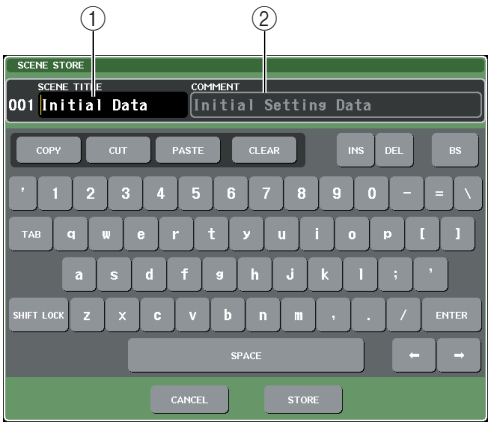
### ③ COMMENT
Sorted in numeric/alphabetical order of comment.

### ④ TIME STAMP
Sorted in order of date of creation.

HINT

- *By pressing the same location again, you can change the direction (forward or backward) in which the list is sorted.*

## 5 If you want to edit the title or comment of a scene, press the TITLE field or COMMENT field of the scene to access the SCENE TITLE EDIT or SCENE COMMENT EDIT popup window.
For details on entering text, refer to "Entering names" (→ p. 34).




### ① SCENE TITLE field
You can press this field to select it, and enter a title for the scene (maximum 16 characters).

### ② COMMENT field
You can press this field to select it, and enter a comment for the scene. (The maximum is 32 characters.)

HINT

- *You cannot edit the title or comment of a read-only scene or a write-protected scene.*

## 6 To enable/disable the protect setting, press the protect symbol.
A protect symbol is displayed for write-protected scenes; these scenes cannot be overwritten.

NOTE

- *The R symbol for scene number 000 cannot be disabled.*

## 7 Use the tool buttons to edit the scene memory.
For details, refer to the section "Scene memory editing" that follows.

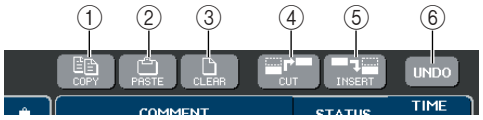
## Scene memory editing

The scenes stored in scene memory can be copied/pasted to other scene numbers, or cleared (erased).

### 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear, where you can perform various operations for scene memory. Scene memories are edited using the buttons shown in the upper part of the SCENE LIST window.

Each button has the following function.




**① COPY button**

Copies a scene into a memory buffer (a temporary storage area). For details on how to use this, refer to "Copying/pasting a scene" that follows.

**② PASTE button**

This button pastes a scene (previously copied into the memory buffer) into another scene number. For details on how to use this, refer to "Copying/pasting a scene" that follows.

**③ CLEAR button**

This button clears (erases) the selected scene. For details on how to use this, refer to "Clearing a scene" (→ p. 143).

**④ CUT button**

Cuts a scene and places it in the memory buffer. Scenes following the scene number you cut will be moved forward. For details on how to use this, refer to "Cutting a scene" (→ p. 144).

**⑤ INSERT button**

Inserts a scene from the memory buffer at the location of a different scene number. Scene numbers following the inserted position will be moved backward. For details on how to use this, refer to "Inserting a scene" (→ p. 144).

**⑥ UNDO button**

This button cancels the most recently-executed scene editing operation. If you've accidentally cleared an important scene, you can press this key to return to the state prior to editing the scene.

NOTE

- *The UNDO button cannot be used if you've simultaneously edited multiple scenes.*

### 2 Perform the desired editing operation.

For details on the procedure, refer to the following explanations.

## Copying/pasting a scene

Here's how to copy a scene into buffer memory, and then paste it to a different scene number.

HINT

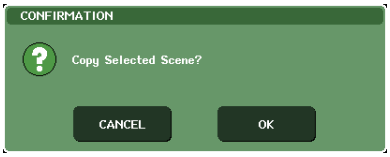
- *The Global Paste function enables you to copy any channel or any parameter settings for the current scene, then paste the data to any single or multiple scene data in memory (→ p. 145).*

### 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear.

### 2 Turn any one of the multifunction encoders to select the copy-source scene number, and then press the COPY button.

A dialog box will ask you to confirm the Copy operation.




### 3 To execute the copy, press the OK button.

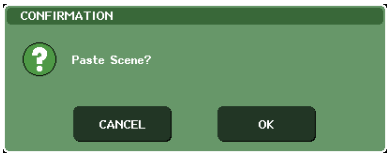
The scene you selected in step 2 will be saved in the buffer memory.

NOTE

- *Be aware that if you copy/cut another scene before you paste, the other scene will be overwritten to the buffer memory.*
- *You cannot select multiple scenes as the copy-source.*

### 4 Turn any one of the multifunction encoders to select the paste-destination scene number, and then press the PASTE button.

A dialog box will ask you to confirm the Paste operation.




HINT

- *You can select multiple paste-destination scenes. To do so, turn the MULTI SELECT button on and turn a multifunction encoder, or press the multifunction encoder while you turn it. In this case, the same content will be pasted to all selected scenes.*
- *A copied scene can also be inserted (→ p. 144).*

NOTE

- *If nothing has been stored in the buffer memory, the PASTE button is not available.*

**5 To execute the paste operation, press the OK button.**

The scene stored in the buffer memory will be pasted to the scene number you selected in step 4. If you decide to cancel the Paste operation, press the CANCEL button instead of the OK button.

NOTE

- *Be aware that when you paste to a scene number in which a scene has already been stored, the existing scene will be overwritten.*
- *Read-only scenes or write-protected scenes cannot be pasted.*

## Clearing a scene

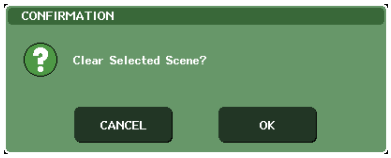
Here's how to clear a specified scene.

**1 Press the SCENE field in the function access area.**

The SCENE LIST window will appear.

**2 Turn any one of the multifunction encoders to select the scene number that you want to clear, and press the CLEAR button.**

A dialog box will ask you to confirm the Clear operation.




HINT

- *You may select multiple scenes to be cleared. To do so, turn the MULTI SELECT button on and turn a multifunction encoder, or press the multifunction encoder while you turn it.*

**3 To execute the Clear operation, press the OK button.**

The scene number(s) you selected in step 2 will be cleared. If you decide to cancel the Clear operation, press the CANCEL button instead of the OK button.

NOTE

- *Read-only scenes or write-protected scenes cannot be cleared.*

## Cutting a scene

Here's how to cut a scene. When you cut a scene, the scenes of subsequent numbers will move forward. You can paste or insert a cut scene at the desired location.

### 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear.

### 2 Turn any one of the multifunction encoders to select the scene number that you want to cut, and press the CUT button.

A dialog box will ask you to confirm the Cut operation.

NOTE

- *The CUT button cannot be used if the scene list is sorted in any other way than by the "NO." column.*

### 3 To execute the Cut operation, press the OK button.

The scene you selected in step 2 will be cut, and the scenes of subsequent numbers will be moved forward. At this time, the scene that was cut will be held in the buffer memory.

NOTE

- *Read-only scenes or write-protected scenes cannot be cut.*

### 4 If desired, you can paste (→ p. 142) or insert the cut scene (that was held in the buffer memory).

NOTE

- *Be aware that if you copy or cut a different scene before you paste or insert, the newly copied or cut scene will overwrite the scene in the buffer memory.*

## Inserting a scene

Here's how a scene held in the buffer memory can be inserted at the desired scene number location.

### 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear.

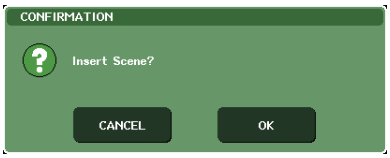
### 2 Perform the Copy operation (→ p. 142) or Cut operation so that the scene you want to insert is placed in the buffer memory.

NOTE

- *You cannot copy or cut multiple scenes as the source.*

### 3 Turn any one of the multifunction encoders to select the insert-destination scene number, and then press the INSERT button.

A dialog box will ask you to confirm the Insert operation.




HINT

- *If you select multiple scenes as the insert-destination, the same scene will be inserted for the selected number of time.*

NOTE

- *The INSERT button cannot be used if the scene list is sorted in any other way than by the "NO." column.*
- *If nothing has been stored in the buffer memory, the INSERT button is not available.*
- *The INSERT button cannot be used if the Insert operation would cause the number of stored scenes to exceed 300.*

### 4 To execute the Insert operation, press the OK button.

The scene stored in the buffer memory will be insert at the scene number you selected in step 3. If you selected multiple scenes as the insert-destination, the same scene will be inserted multiple times starting at the scene number you selected. Scenes that were stored in subsequent numbers following that location will be moved backward by the number of scenes that were inserted.

# Using the Global Paste

"Global Paste" is a function that lets you copy and paste settings of the desired channel or parameter from the current scene to scene data in memory (multiple selections are allowed). This is a convenient way in which changes to the current scene can be applied to multiple scenes that have already been stored.

## Using the Global Paste function

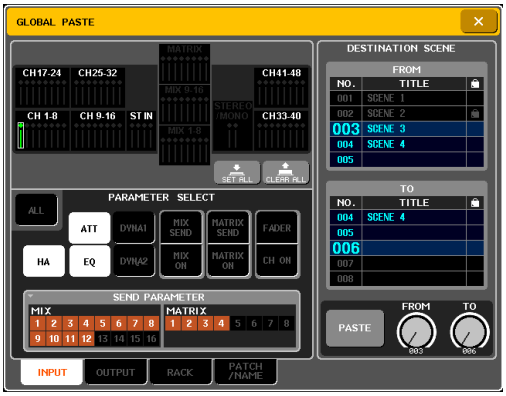
NOTE

- *The Global Paste function can be used only by users for whom SCENE LIST STORE/SORT is turned on in their user level settings.*

### 1 In the function access area, press the SCENE field to access the SCENE LIST window.

### 2 In the lower right of the SCENE LIST window, press the GLOBAL PASTE button to access the GLOBAL PASTE window.

In this screen you can select the copy-source channels/parameters and specify the paste-destination scene data.




### 3 Use the tabs to select the items to be copied from the following choices.

| | |
|---|---|
| **INPUT** | Input channels and parameters |
| **OUTPUT** | Output channels and parameters |
| **RACK** | RACK 1–8 |
| **PATCH/NAME** | Input/output patching and channel names |

### 4 Select the copy-source channels and parameters.

The display will depend on the tab you selected.

You cannot select different parameters for each channel.

Use the top panel [SEL] keys to select a channel.

#### ● INPUT tab

Select the input channel in the upper left, and its parameters in the lower left.

You can select the following parameters.

| | |
|---|---|
| **ALL** | All input channel parameters (except INPUT PATCH and INPUT NAME) |
| **HA** | Settings for the head amp assigned to the corresponding input channel |
| **ATT** | Attenuator |
| **EQ** | EQ settings |
| **DYNA1** | Dynamics 1 settings (including KEY IN SOURCE and KEY IN FILTER) |
| **DYNA2** | Dynamics 2 settings (including KEY IN SOURCE) |
| **MIX ON/SEND** | Send to MIX bus on/off, send level, pan, and PRE/POST |
| **MTRX ON/SEND** | Send to MATRIX bus on/off, send level, pan, and PRE/POST |
| **FADER** | Fader level |
| **CH ON** | [ON] key on/off status |

#### ● OUTPUT tab

Select the output channel in the upper left, and its parameters in the lower left.

You can select the following parameters.

| | |
|---|---|
| **ALL** | All output channel parameters (except OUTPUT PATCH and OUTPUT NAME) |
| **ATT** | Attenuator |
| **EQ** | EQ settings |
| **DYNA1** | Dynamics 1 settings (including KEY IN SOURCE and KEY IN FILTER) |
| **MATRIX ON** | Send to MATRIX bus on/off (only for MIX and STEREO/MONO channels) |
| **MATRIX SEND** | Send level to MATRIX bus, pan, PRE/POST (only for MIX and STEREO/MONO channels) |
| **FADER** | Fader level |
| **CH ON** | [ON] key on/off status |
| **WITH MIX SEND** | Selects whether the send level sent from input channels to the selected MIX bus will be included in the pasted data. |
| **WITH MATRIX SEND** | Selects whether the send level sent from input channels to the selected MATRIX bus will be included in the pasted data. |

● **RACK tab**
Select RACK 1–8.

● **PATCH/NAME tab**
Select from INPUT PATCH, INPUT NAME, OUTPUT PATCH, and OUTPUT NAME.

### 5 In the DESTINATION SCENE area, select the range of paste-destination scenes.

The data will be pasted to all scenes in the range between FROM and TO. Use multi-function encoder 7 to select FROM, and multi-function encoder 8 to select TO.

### 6 Press the PASTE button.

The selected items of the current scene will be pasted to the scene(s) in memory.

A progress bar will be shown while the Paste operation is being performed.

The STOP button is shown while the Paste function is being executed; you can stop by pressing this button. In this case, the Paste function will have been partially executed, and the data cannot be restored to its previous state.

# Using the Focus function

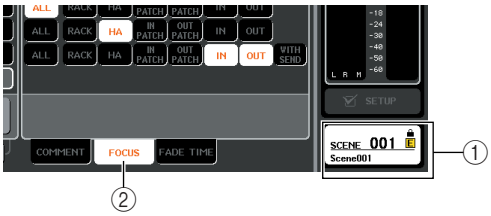
"Focus" is a function that lets you specify the parameters that will be updated when you recall a scene. For example, it is convenient to use this if you want to recall only the input channel settings of a certain scene.

HINT

- *As a function similar to Focus, there is also a "Recall Safe" function that lets you select channels and parameters to be excluded from recall operations (→ p. 148). However while the Focus function is specified for each scene, Recall Safe settings are common to all scenes.*

## 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear, where you can perform various operations for scene memory.

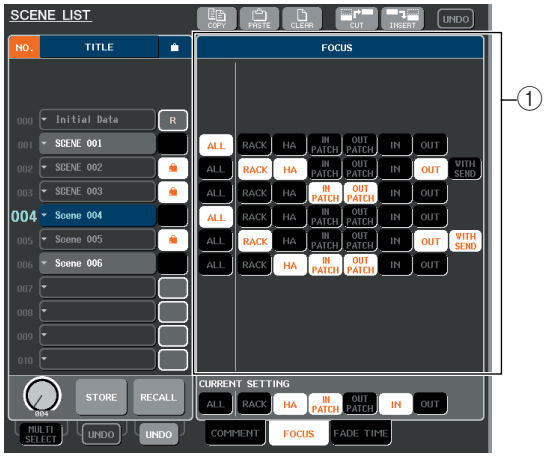



① **SCENE field**

② **FOCUS tab**

## 2 Press the FOCUS tab at the bottom of the SCENE LIST window.

The FOCUS field will appear in the right half of the SCENE LIST window.




① **FOCUS field**

In this field you can make settings for the Focus function.

The buttons in this field correspond to the scene list shown in the left side of the SCENE LIST window.

The CURRENT SETTING field lets you make Focus settings that will be used the next time you perform a Scene Store operation.

HINT

- *When you recall a scene, the Focus settings of that scene will be reflected in CURRENT SETTING.*

## 3 Use the buttons other than "ALL" to select the parameters that will be subject to recall for each scene.

These buttons correspond to the following parameters (multiple selections are allowed).

| Button name | Corresponding parameters |
|---|---|
| **RACK** | Rack settings |
| **HA** | Head amp settings |
| **IN PATCH** | Input channel patching |
| **OUT PATCH** | Output channel patching |
| **IN** | Input channel parameters (including DCA group settings) |
| **OUT** | Output channel parameters |
| **WITH SEND** | On/off status and send level settings for signals sent from input channels to MIX buses and MATRIX bus (shown only if the OUT button is on) |

HINT

- *The WITH SEND button is shown only if the OUT button is on. However if both the IN button and OUT button are on, the parameters corresponding to WITH SEND will automatically be subject to recall.*

## 4 If you want to cancel the restrictions you specified in step 3, so that all parameters will be subject to recall, turn the ALL button on.

When you turn on the ALL button, all other buttons for that scene will be turned off. Turning on any other button will turn off the ALL button.

## 5 Recall a scene for which you've made Focus settings.

If buttons other than ALL are turned on for the scene, only the parameters whose buttons are on will be recalled. If the ALL button is turned on for the scene, all parameters will be updated.

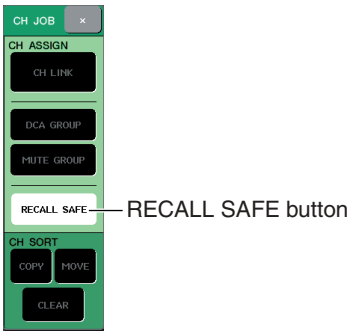
HINT

- *Scenes for which Focus settings are made are shown by a "FOCUS" indication in the STATUS field of the SCENE LIST window.*
- *The Focus function can be used in conjunction with the Recall Safe function (→ p. 148). Channels or parameters that are excluded from Recall operations by either Focus or Recall Safe will not be recalled.*

# Using the Recall Safe function

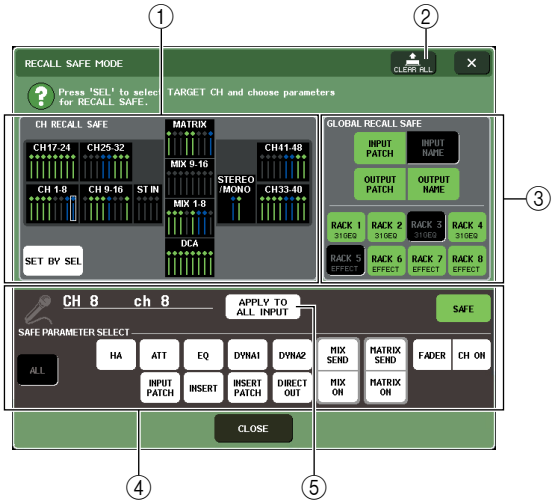
"Recall Safe" is a function that excludes only specific parameters/channels (DCA groups) from Recall operations. This differs from the Focus settings (→ p. 147) made for individual scenes in that Recall Safe settings are common to all scenes.

## 1 In the function access area, press the CH JOB button to access the CH JOB popup window.




## 2 Press the RECALL SAFE button to access the RECALL SAFE MODE popup window.

In this popup window you can make settings for the Recall Safe function. The window contains the following items.




### ① CH RECALL SAFE field

The channels and DCA groups for which Recall Safe is turned on are highlighted in this field. If you turn on the SET BY SEL button, you can turn on Recall Safe for a channel or DCA group simply by pressing the [SEL] key of that channel or DCA group.

### ② CLEAR ALL button

This clears all Recall Safe settings for the channels or DCA groups that are highlighted in the CH RECALL SAFE field.

### ③ GLOBAL RECALL SAFE field

Press the buttons in this field to select the global parameters (i.e., parameters that apply to the entire mix, rather than to specific channels) that will be set to Recall Safe.

### ④ SAFE PARAMETER SELECT field

Here you can switch Recall Safe on/off for the desired channels or DCA groups, and choose the parameters that will be excluded from Recall operations. The channel or DCA group you selected by pressing its [SEL] key will be shown in this field as the target of your operations. If you press any of the [SEL] keys of the DCA groups, the parameters for DCA groups 1–8 will be shown simultaneously.

### ⑤ APPLY TO ALL INPUT button / APPLY TO ALL OUTPUT button

If these buttons are on when you operate the SAFE PARAMETER SELECT buttons, the changes will apply to all input (or output) channels. This is convenient when you want to make settings for all channels together.

HINT

- *The RECALL SAFE MODE popup window can also be accessed from the SELECTED CHANNEL VIEW screen's RECALL SAFE field (→ p. 95).*

## 3 To select the channel or DCA group whose Recall Safe settings you want to edit, press the corresponding [SEL] key.

The corresponding channel or DCA group will be enclosed by a white frame in the CH RECALL SAFE field. (However, this white frame does not mean that the Recall Safe setting is now enabled.) The selected channel or DCA groups 1–8 will be recalled to the SAFE PARAMETER SELECT field.

HINT

- *If the CH RECALL SAFE field's SET BY SEL button is on, Recall Safe will be enabled when you press the [SEL] key, and the corresponding channel or DCA group will be highlighted in the CH RECALL SAFE field. You can select parameters as described in step 4 even after turning Recall Safe on.*

## 4 If you want to enable Recall Safe for specific parameters of the selected channel or DCA group, make the following settings in the SAFE PARAMETER SELECT field.

NOTE

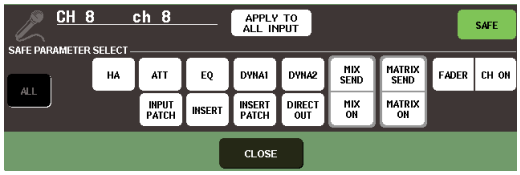
- *Simply selecting a parameter in step 4 does not enable Recall Safe. To turn Recall Safe on/off, you must also perform the operation of step 5.*

HINT

- *While the APPLY TO ALL INPUT button (or the APPLY TO ALL OUTPUT button) is on, operations in the SAFE PARAMETER SELECT field will apply to all input channels (or output channels).*

## ● If an INPUT channel is selected

Use the buttons in the lower part of the SAFE PARAMETER SELECT field (except for the "ALL" button) to select the parameters that will be subject to Recall Safe (multiple selections are allowed). If you want all parameters to be subject to Recall Safe, turn on the ALL button (this is the default setting).
These buttons correspond to the following parameters.



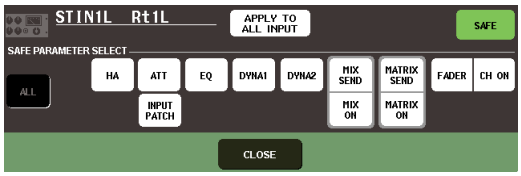

| Button name | Corresponding parameters |
|---|---|
| **ALL** | All parameters |
| **HA** | Head amp settings (including external HA) |
| **ATT** | Attenuater settings |
| **EQ** | EQ settings (including HPF) |
| **DYNA 1** | Dynamics 1 settings |
| **DYNA 2** | Dynamics 2 settings |
| **INPUT PATCH** | Input channel patching |
| **INSERT** | Insert settings |
| **INSERT PATCH** | Insert patching |
| **DIRECT OUT** | Direct out settings |
| **MIX SEND** | Send levels of signals sent to MIX buses |
| **MIX ON** | On/off status of signals sent to MIX buses |
| **MATRIX SEND** | Send levels of signals sent to MATRIX buses |
| **MATRIX ON** | On/off status of signals sent to MATRIX buses |
| **FADER** | Fader positions |
| **CH ON** | On/off status of [ON] keys |

NOTE

- *If the ALL button is on, all other buttons in the lower part of the SAFE PARAMETER SELECT field will be turned off.*

## ● If a ST IN channel is selected

With the exception of the types of button that are displayed, this is the same as for an INPUT channel. These buttons correspond to the following parameters.



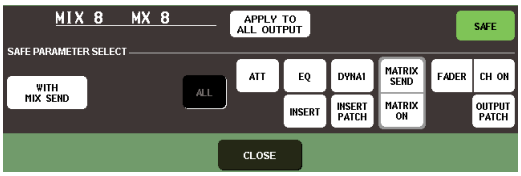

| Button name | Corresponding parameters |
|---|---|
| **ALL** | All parameters |
| **ATT** | Attenuator settings |
| **EQ** | EQ settings |
| **DYNA 1** | Dynamics 1 settings |
| **DYNA 2** | Dynamics 2 settings |
| **INPUT PATCH** | Input channel patching |
| **MIX SEND** | Send levels of signals sent to MIX buses |
| **MIX ON** | On/off status of signals sent to MIX buses |
| **MATRIX SEND** | Send levels of signals sent to MATRIX buses |
| **MATRIX ON** | On/off status of signals sent to MATRIX buses |
| **FADER** | Fader positions |
| **CH ON** | On/off status of [ON] keys |

NOTE

- *If the ALL button is on, all other buttons in the lower part of the SAFE PARAMETER SELECT field will be turned off.*

## ● If a MIX channel is selected

Use the buttons in the lower part of the SAFE PARAMETER SELECT field (except for the "ALL" button) to select the parameters that will be subject to Recall Safe (multiple selections are allowed).
In addition, you can use the WITH MIX SEND button displayed in the lower-left part of the field to enable Recall Safe for the on/off status and send level of the signals sent from input channels to MIX buses.
If you want all parameters shown in the lower part of the field to be subject to Recall Safe, turn on the ALL button (this is the default setting).
These buttons correspond to the following parameters.



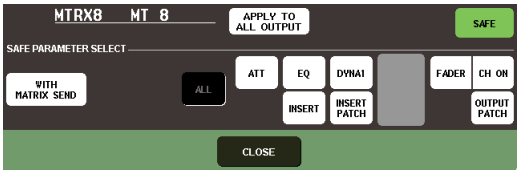

| Button name | Corresponding parameters |
|---|---|
| **ALL** | All parameters (except for WITH MIX SEND) |
| **ATT** | Attenuator settings |
| **EQ** | EQ settings |
| **DYNA 1** | Dynamics 1 settings |
| **INSERT** | Insert settings |
| **INSERT PATCH** | Insert patching |
| **MATRIX SEND** | Send levels of signals sent to MATRIX buses |
| **MATRIX ON** | On/off status of signals sent to MATRIX buses |
| **FADER** | Fader positions |
| **CH ON** | On/off status of [ON] keys |
| **OUTPUT PATCH** | Output channel patching |
| **WITH MIX SEND** | On/off status and send level of signals sent from input channels to MIX buses |

NOTE

- *If the ALL button is on, all buttons will be turned off except for the WITH MIX SEND button located in the lower part of the SAFE PARAMETER SELECT field.*
- *You can switch the WITH MIX SEND button on/off while the ALL button is left on.*

### ● If a MATRIX channel is selected

With the exception of the types of button that are displayed, this is the same as for a MIX channel.
These buttons correspond to the following parameters.



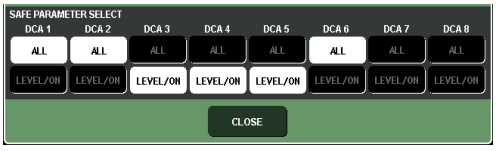

| Button name | Corresponding parameters |
|---|---|
| **ALL** | All parameters (except for WITH MATRIX SEND) |
| **ATT** | Attenuator settings |
| **EQ** | EQ settings |
| **DYNA 1** | Dynamics 1 settings |
| **INSERT** | Insert settings |
| **INSERT PATCH** | Insert patching |
| **FADER** | Fader positions |
| **CH ON** | On/off status of [ON] keys |
| **OUTPUT PATCH** | Output channel patching |
| **WITH MATRIX SEND** | On/off status and send level of signals sent from input channels / MIX channels / STEREO/ MONO channels to MATRIX buses |

NOTE

- *If the ALL button is on, all buttons will be turned off except for the WITH MIX SEND button located in the lower part of the SAFE PARAMETER SELECT field.*
- *You can switch the WITH MATRIX SEND button on/off while the ALL button is left on.*

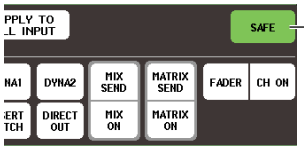
### ● If a DCA group is selected

If you press any of the [SEL] keys of the DCA groups, the parameters for DCA groups 1–8 will be shown simultaneously. As the parameters subject to Recall Safe, you can select either “ALL” or “LEVEL/ON” (fader position and on/off status of [ON] key). Recall Safe will be enabled when you make this selection.
If you want all parameters of the DCA group to be subject to Recall Safe, turn on the ALL button. Unlike when a channel is selected, Recall Safe will be enabled for that DCA group the moment you turn on either the LEVEL/ ON button or the ALL button.




## 5 To enable Recall Safe for the selected channel, turn on the SAFE button in the SAFE PARAMETER SELECT field. (If you selected a DCA group, turn on either the LEVEL/ON button or the ALL button.)

Channels or DCA groups for which Recall Safe is enabled will be highlighted in the CH RECALL SAFE field.




HINT

- *In the CH RECALL SAFE field, the color of the highlight will be green if the ALL button was selected in step 4, or blue if buttons other than ALL were selected.*
- *If you press the CLEAR ALL button, Recall Safe will be defeated for all channels and DCA groups for which it is enabled (i.e., the highlighted channels and DCA groups).*
- *You can also switch Recall Safe on/off in the SEL CH VIEW screen’s RECALL SAFE field (→ p. 95).*

## 6 To turn on Recall Safe for global parameters, turn on the buttons of the GLOBAL RECALL SAFE field.

These buttons correspond to the following parameters.

| Button name | Corresponding parameters |
|---|---|
| **INPUT PATCH** | Input channel patching |
| **INPUT NAME** | Input channel name |
| **OUTPUT PATCH** | Output channel patching |
| **OUTPUT NAME** | Output channel name |
| **RACK 1–8** | Rack 1–8 settings |

## 7 When you’ve finished making settings, press the CLOSE button to close the popup window. Then perform a Recall operation.

Only the selected channel(s) (DCA group(s) and parameter(s) will be excluded from Recall operations.
Channel Link (→ p. 130) and bus settings (→ p. 234) are not subject to Recall Safe; they will always be reproduced in the recalled scene.
This means that if Recall Safe is enabled for one of several channels included in a link group or one of two channels set to stereo, the parameter settings of that channel may differ from those of the other channel(s). In such cases, the applicable parameter will be automatically re-linked the next time it is operated.

HINT

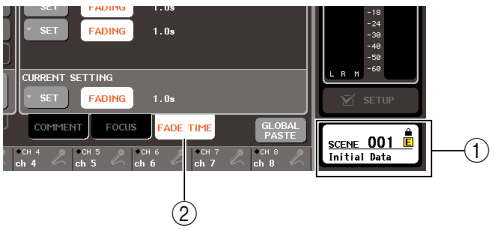
- *The Recall Safe function can be used in conjunction with the Focus function (→ p. 148). Channels or parameters that are excluded from Recall operations by either Focus or Recall Safe will not be recalled.*
- *If you perform a Recall operation while holding down a [SEL] key, the Recall Safe settings of that channel will temporarily be abled for that Recall operation.*

# Using the Fade function

"Fade" is a function that smoothly changes the faders of specified channels and DCA groups to their new values over a specified duration when you recall a scene. The settings of the Fade function are made independently for each scene.

## 1 Press the SCENE field in the function access area.

The SCENE LIST window will appear, where you can perform various operations for scene memory.

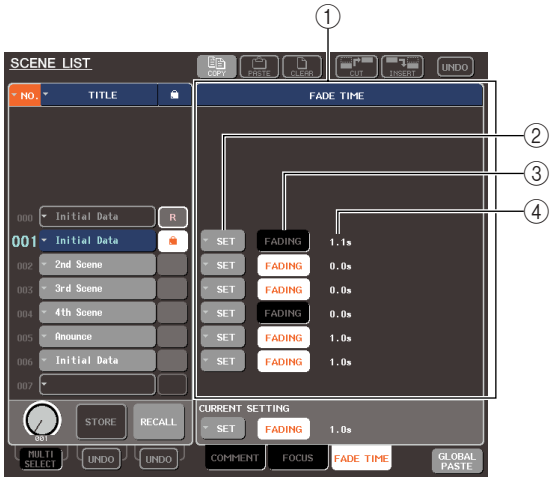



① **SCENE field**

② **FADE TIME tab**

## 2 Press the "FADE TIME" tab at the bottom of the SCENE LIST window.

You can use tabs to switch the right half of the SCENE LIST window between three different fields. In this case, press the tab to make the FADE TIME field appear.




① **FADE TIME field**

In this field you can make settings for the Fade function. The buttons in this field correspond to the scene list shown in the left side of the SCENE LIST window.

The CURRENT SETTING field lets you make Fade settings that will be used the next time you perform a Scene Store operation.

HINT

- *When you recall a scene, the Fade settings of that scene will be reflected in CURRENT SETTING.*

② **SET buttons**

These buttons display the FADE TIME popup window.

③ **FADING buttons**

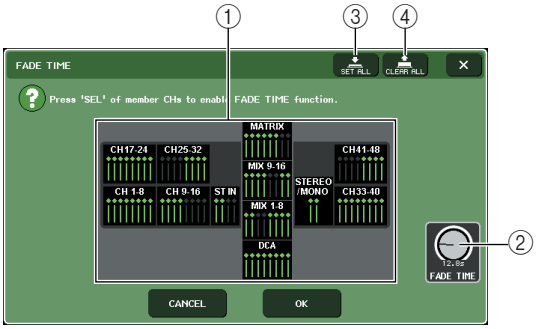
These buttons switch the Fade function on/off for each scene.

④ **Fade time**

These indicate the fade time (the time over which the fader will reach the new value).

## 3 Press the SET button to access the FADE TIME popup window.

In this popup window you can select the channel to which Fade will be applied, and adjust the fade time.




① **Channel display field**

The channels or DCA groups to which Fade is applied are highlighted.

② **FADE TIME knob**

This knob sets the fade time. You can use the corresponding multifunction encoder to adjust this.

③ **SET ALL button**

If you press this button, the Fade effect will be applied to all faders of that scene.

④ **CLEAR ALL button**

If you press this button, the Fade effect will be cancelled for all faders of that scene.

## 4 Press the [SEL] keys of the desired channels or DCA groups to select the channels and DCA groups to which the Fade effect will be applied (multiple selections are allowed).

The [SEL] keys of the selected channels and DCA groups will light, and those channels and DCA groups will be highlighted in the channel display field of the popup window. You can cancel a selection by pressing a lit [SEL] key once again to make it go dark.

### 5 Use the multifunction encoders corresponding to the FADE TIME knobs to adjust the fade time.

The range is 0.0 sec – 60.0 sec.

When you've finished making settings, press the CLOSE button to close the FADE TIME popup window.

HINT

- *The fade time you specify here is used for all channels and DCA groups selected in step 4.*

### 6 To enable the Fade function, press the FADING button.

The Fade on/off setting is made individually for each scene.

HINT

- *Scenes for which Fade settings are made are shown by a "FADING" indication in the STATUS field of the SCENE LIST window.*

### 7 Recall a scene for which the Fade function is turned on.

The faders will begin to move immediately after Recall occurs, and will reach the values of the recalled scene over the course of the specified fade time.

NOTE

- *The Fade function settings can be applied individually even if faders are linked by Channel Link.*

HINT

- *By stopping a moving fader while you hold down the corresponding [SEL] key, you can stop the fade operation of the fader at that point.*
- *If you recall the same scene while faders are moving, the faders of all channels and DCA groups will move immediately to their target positions.*

# ◆ Chapter 13 ◆
# Monitor/Cue

This chapter explains the M7CL's monitor/cue functions.

## About the monitor/cue functions

The Monitor function lets you audition various outputs through your nearfield monitors or headphones. Below the M7CL's front pad there is a PHONES OUT jack for monitoring, and this jack always lets you monitor the signal that is selected as the monitoring source. By assigning the MONITOR OUT L/R/C channels to the desired output jacks, you can also monitor the same signal through external speakers. You can select the following signals as the monitor source.

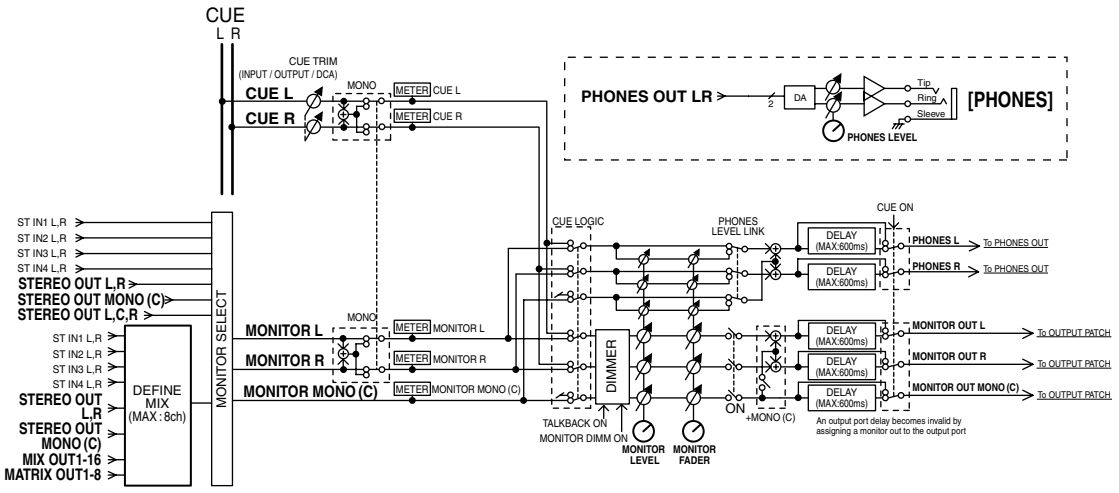
- STEREO channel output signal
- MONO channel output signal
- STEREO + MONO channel output signal
- ST IN channel 1–4 input signal
- A combination of up to eight MIX, MATRIX, STEREO, or MONO channel output signals and ST IN channel input signals.

The Cue function lets you check an individual selected channel/DCA group by temporarily monitoring it via MONITOR OUT or PHONES. When you press the top panel [CUE] key, the cue signal of the corresponding channel/DCA group is sent as the monitor output from the selected output port.

NOTE

*• The cue signal is sent to the same output destination as the monitor signal. Be aware that for this reason, if you turn off the Monitor function, the cue signal will no longer be sent to the connected monitor speakers. However, the cue signal will always be sent to the PHONES OUT jack.*

The following diagram shows the cue/monitor signal flow.




● **MONITOR SELECT**
Selects the monitor source.

● **METER**
Detects and indicates the level of the monitor signal or cue signal.

● **DIMMER**
Attenuates the monitor/cue signal by a fixed amount.

● **MONITOR LEVEL**
Adjusts the output level of the MONITOR OUT L/R/C channels. If PHONES LEVEL LINK is ON, this will also affect the level at the PHONES OUT jack.

● **MONITOR FADER**
Use the STEREO MASTER fader or MONO MASTER fader to adjust the output level of the MONITOR OUT L/R/C channels. MONITOR FADER is positioned in serial with MONITOR LEVEL. If PHONES LEVEL LINK is ON, this setting will also affect the level at the PHONES OUT jack.

● **ON (On/off)**
Switches the monitor function on/off.

● **DELAY (Monitor delay)**
Delays the monitor signal. The Delay function is disabled if the Cue signal is being output.

● **PHONES LEVEL (Headphone level)**
Adjusts the output level of only the PHONES OUT jack.

● **PHONES LEVEL LINK (Headphone level link function)**
If this is on, the MONITOR LEVEL knob will adjust the level of the signal sent to the PHONES OUT jack.

# Using the Monitor function

This section explains how to select the desired monitor source, and monitor it from the PHONES OUT jack or external monitor speakers.

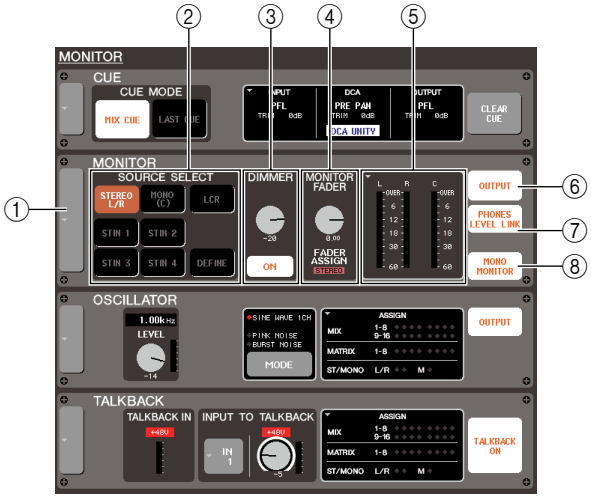
## 1 Connect your monitor system to the rear panel OMNI OUT jacks, 2TR OUT DIGITAL jack, or an I/O card installed in a slot.

The monitor signal can be sent to any desired output jack or output channel. If you're monitoring through headphones, make sure that your headphones are connected to the PHONES OUT jack under the front pad.

## 2 In the function access area, press the MONITOR button to access the MONITOR screen.

In the MONITOR screen, the MONITOR field lets you check the current monitor settings, and turn monitoring on/off.

The MONITOR screen includes the following items.




### ① Popup button
Opens the MONITOR popup window, where you can make detailed settings for monitoring.

### ② SOURCE SELECT field
Use the buttons in this field to select the monitor source.

### ③ DIMMER field
The Dimmer function which temporarily attenuates the monitor signal can be switched on/off here. If you press the knob in this field so that it is enclosed by a heavy frame, you can use multifunction encoder 4 to adjust the amount of attenuation.

### ④ MONITOR FADER field
This adjusts the monitor fader level. It also indicates FADER ASSIGN MODE. Use the MONITOR popup window to engage FADER ASSIGN MODE.

### ⑤ Meter field
This indicates the level of the monitor signal. This meter shows the level immediately before the dimmer. The MONITOR popup window will appear if you press this field, allowing you to make detailed settings for monitoring.

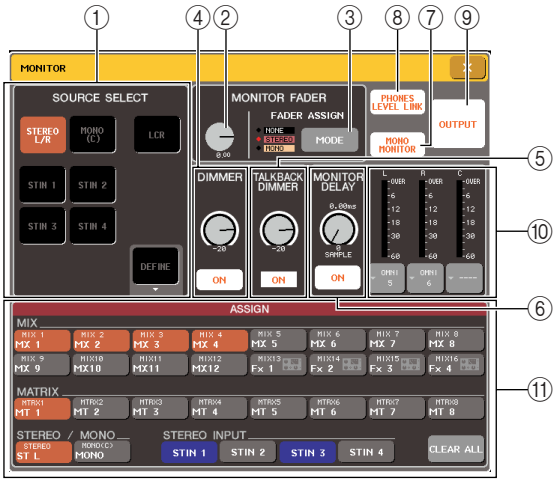
### ⑥ OUTPUT button
Turns the monitor output on/off.

### ⑦ PHONES LEVEL LINK button
If this is on, the MONITOR LEVEL knob will adjust the level of the signal sent to the PHONES OUT jack.

### ⑧ MONO MONITOR button
This button allows monaural monitoring. If this button is on, the signal sent from the PHONES OUT jack and the MONITOR OUT L/R channels will be monaural.

## 3 Press the popup button or the meter field to open the MONITOR popup window.

In the MONITOR popup window you can make detailed settings for monitoring. The popup window includes the following items.



### ① SOURCE SELECT field

Use the buttons in this field to select the monitor source. This operation can also be performed using the SOURCE SELECT field in the MONITOR screen.

### ② MONITOR FADER level

This adjusts the monitor fader level.

### ③ FADER ASSIGN MODE button

Pressing this button in the MONITOR popup window repeatedly will switch the setting in the following order: NONE → STEREO → MONO → NONE.

When STEREO is selected, you can use the SETERO MASTER fader on the top panel to adjust the monitor fader. You can also switch monitor output on and off using the [ON] key located above the STEREO MASTER fader.

When MONO is selected, you can use the MONO MASTER fader on the top panel to adjust the monitor fader. You can also switch monitor output on and off by using the [ON] key located above the MONO MASTER fader.

### ④ DIMMER field

Here you can make settings for the Dimmer function which temporarily attenuates the monitor signal.

- **DIMMER knob**

  ..... This adjusts the amount by which the monitor signal will be attenuated when the dimmer is on. You can use multifunction encoder 4 to control this. This operation can also be performed in the DIMMER field of the MONITOR screen.

- **DIMMER ON button**

  ..... If this button is on, the monitor signal level will be attenuated according to the setting of the DIMMER knob. This operation can also be performed in the DIMMER field of the MONITOR screen.

### ⑤ TALKBACK DIMMER field

Here you can view and make settings for the Talkback Dimmer.

- **TALKBACK DIMMER knob**

  ..... This adjusts the amount by which the monitor signal will be attenuated when talkback is on. You can use multifunction encoder 5 to control this.

- **TALKBACK DIMMER indicator**

  ..... This indicator shows that talkback is on, and that the talkback dimmer is operating.

HINT

- *If the normal dimmer and the talkback are both switched on simultaneously, the setting with the greatest amount of attenuation will be applied.*

### ⑥ MONITOR DELAY field

This field specifies the monitor delay setting by which the monitor signal is delayed. You can use this in large auditoriums where there is a time difference between the monitor signal and the direct sound.

- **MONITOR DELAY knob**

  ..... Adjusts the delay time for the monitor signal. You can use multifunction encoder 6 to control this.

- **MONITOR DELAY ON button**

  ..... If this button is on, the monitor signal will be delayed according to the setting of the MONITOR DELAY knob.

### ⑦ MONO MONITOR button

This button allows monaural monitoring. If this button is on, the signal sent from the PHONES OUT jack and the MONITOR OUT L/R channels will be monaural.

### ⑧ PHONES LEVEL LINK button

If this is on, the MONITOR LEVEL knob or MONITOR FADER knob will adjust the level of the signal sent to the PHONES OUT jack.

### ⑨ OUTPUT button

Switches the monitor function on/off. This operation can also be performed using the OUTPUT button in the MONITOR screen.

### ⑩ Meter field

- **Output select button**

  ..... This opens the OUTPUT PORT SELECT popup window, where you can select the port that will output the monitor signal.

- **Level meter** ... This indicates the level of the monitor signal. This meter shows the level immediately before the dimmer.

### ⑪ ASSIGN field

If you selected DEFINE in the SOURCE SELECT field, use this field to specify the monitor source. You can select up to eight monitor sources simultaneously. Pressing the CLEAR ALL button will clear all selections.

## 4 Use the buttons of the SOURCE SELECT field to select a monitor source.

In the SOURCE SELECT field you can select only one monitor source. However if you've selected DEFINE, you can use the ASSIGN field to specify multiple monitor sources.

The following table shows the monitor sources you can select in the SOURCE SELECT field.

| | |
|---|---|
| **STEREO L/R button** | STEREO L/R channel output signal |
| **MONO (C) button** | MONO channel output signal |
| **LCR button** | STEREO L/R + MONO channel (LCR) output signal |
| **ST IN 1–4 buttons (M7CL-32/48)** | ST IN jacks 1–4 input signals |
| **OMNI 1–2 – 7–8 buttons (M7CL-48ES)** | OMNI IN jacks 1–8 input signals |
| **DEFINE button** | The signal(s) selected in the ASSIGN field |

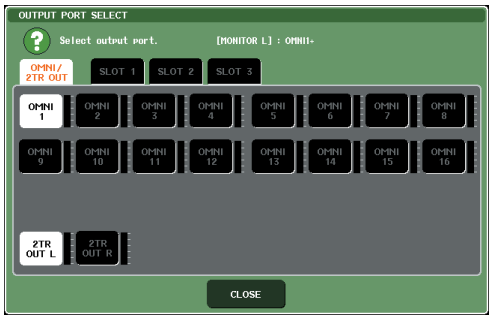
If you've selected DEFINE in the SOURCE SELECT field, you can use the ASSIGN field to select multiple sources. The following table shows the monitor sources you can select in the ASSIGN field.

| | |
|---|---|
| **MIX 1–16 buttons** | Output signals of MIX channels 1–16 |
| **MTRX 1–8 buttons** | Output signals of MATRIX channels 1–8 |
| **STEREO L/R button** | STEREO L/R channel output signal |
| **MONO (C) button** | MONO channel output signal |
| **ST IN 1–4 buttons (M7CL-32/48)** | ST IN jacks 1–4 input signals |
| **OMNI 1–2 – 7–8 buttons (M7CL-48ES)** | OMNI IN jacks 1–8 input signals |

NOTE

- *You can select a maximum of eight monitor sources in the ASSIGN field. If you select eight monitor sources, no further selections will be possible. Please turn off the buttons for unneeded sources.*

## 5 To specify a port as the output destination for monitor signals L, C, R, press one of the output select buttons (L/R/C) in the meter field to open the OUTPUT PORT SELECT popup window, and choose from the following monitor signal output destinations (multiple selections are allowed).




**• M7CL-32/48**

| | |
|---|---|
| **OMNI 1–16** | OMNI OUT jacks 1–16 |
| **2TR OUT L, R** | 2TR OUT DIGITAL jack L, R |
| **SLOT 1–3** | Output channels 1–16 of an I/O card installed in slots 1–3 |

**• M7CL-48ES**

| | |
|---|---|
| **ES 1–24** | EtherSound output channels 1–24 |
| **2TR OUT L, R** | 2TR OUT DIGITAL jack L, R |
| **OMNI 1–8** | OMNI OUT jacks 1–8 |
| **SLOT 1–3** | Output channels 1–16 of an I/O card installed in slots 1–3 |

When you've selected an output port, press the CLOSE button to close the popup window.

In the same way, specify the output ports for MONITOR OUT L, R, and C.

HINT

- *If desired, you can specify output ports only for MONITOR OUT L and R, and monitor through two speakers.*
- *If you have not specified an output port for MONITOR OUT C, selecting the MONO (C) button or LCR button as the monitor source will automatically cause the MONO channel signal to be distributed to MONITOR OUT L/R.*

## 6 To enable monitoring, press the OUTPUT button to turn it on.

The monitor source you selected in step 4 will be sent to the output destination you specified in step 5.

HINT

- *The PHONES OUT jack will always output the monitor signal, regardless of whether the OUTPUT button is on or off.*

## 7 To adjust the monitor fader by using the STREO MASTER fader/MONO MASTER fader, press the FADER ASSIGN MODE button to select STERO or MONO.

When STEREO is selected, you can use the SETERO MASTER fader on the top panel to adjust the monitor fader. When MONO is selected, you can use the MONO MASTER fader on the top panel to adjust the monitor fader.

Depending on the FADER ASSIGN MODE setting, the MONITOR button in the function access area turns red when STEREO is selected, and the button turns yellow when MONO is selected.

NOTE

- *The monitor fader and the MONITOR LEVEL knob are placed in serial. The MONITOR LEVEL knob on the top panel remains effective while you are using this function to change the monitor level. If the MONITOR LEVEL knob is set to minimum, no monitor signal will be output.*

## 8 Adjust the monitor fader using the STEREO MASTER fader/MONO MASTER fader, or the MONITOR FADER knob on the screen.

NOTE

- *The [ON] keys for the STEREO or MONO channels and the OUTPUT buttons on the MONITOR screen are linked. The PHONES OUT jack will always output the monitor signal, regardless of whether the OUTPUT button is on or off.*

## 9 To adjust the monitor level, use the MONITOR LEVEL knob located in the SCENE MEMORY/MONITOR section of the top panel.

If PHONES LEVEL LINK is ON, use the MONITOR LEVEL knob and the monitor fader, as well as the PHONES LEVEL knob to adjust the monitor level when monitoring through headphones.

## 10 Make settings for Dimmer, Delay, and Monaural as desired.

HINT

- *Monitor on/off operations, selection of the monitor source, and dimmer on/off operations can also be assigned to user-defined keys (→ p. 216).*

# Using the Cue function

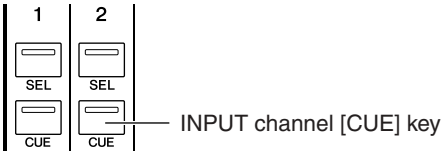
This section explains how to use the M7CL's Cue function.

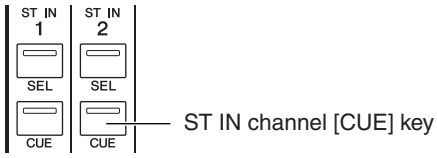
## About cue groups

The M7CL's cue signals can be categorized into the following four groups.

### ① INPUT CUE group

The cue signals of input channels make up this group. To enable Cue for this group, press the [CUE] key of any INPUT channel or ST IN channel to turn Cue on.



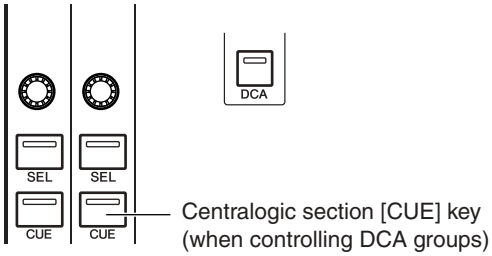




HINT

- *If INPUT channels or ST IN channels are assigned to the Centralogic section, you can also use the [CUE] keys of the Centralogic section to enable Cue for this group.*

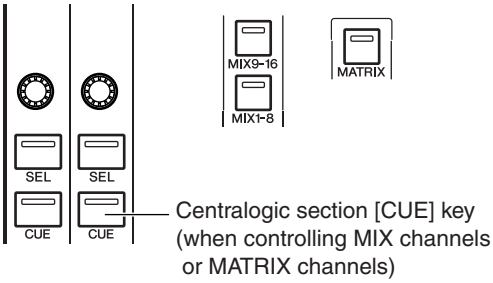
### ② DCA CUE group

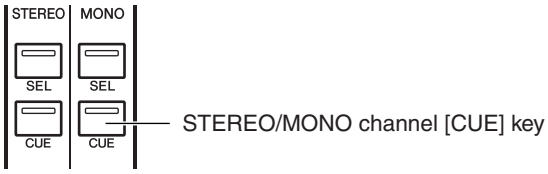
The cue signals of DCA groups make up this group. To enable Cue for this group, assign the DCA groups to the Centralogic section and press a [CUE] key in the Centralogic section to turn Cue on.




### ③ OUTPUT CUE group

The cue signals of output channels make up this group. To switch Cue on/off for this group, press the [CUE] key of a STEREO/MONO channel, or assign MIX channels or MATRIX channels to the Centralogic section and press a [CUE] key of the Centralogic section.




HINT

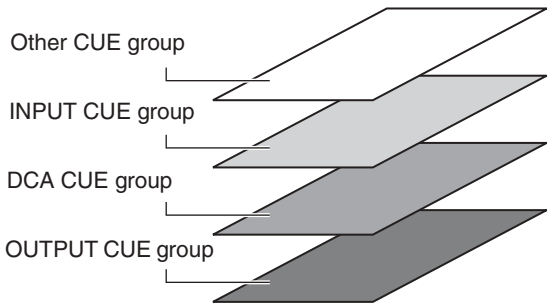
- *If STEREO/MONO channels are assigned to the Centralogic section, you can also use the [CUE] keys of the Centralogic section to enable Cue for this group.*

### ④ Other CUE group

These are the Cue signals operated using buttons displayed in the touch screen. This group is enabled if you turn on the CUE button in an EFFECT popup window or the KEY IN CUE button in the DYNAMICS 1 popup window. This group will automatically be disabled when you exit the corresponding popup window.

It is not possible to simultaneously turn on Cue between different groups. Normally, the group to which the most recently pressed [CUE] key (or a CUE/KEY IN CUE button in the screen) belongs will take priority, and the [CUE] keys of the previously selected group will be defeated. However if you switch the Cue signal group in a specific order, the state of the [CUE] keys of the previously-selected group will be restored when the current Cue signal is defeated.

The following illustration shows the priority order of the [CUE] keys. After you have switched groups from lower to upper levels, if you then defeat Cue for the upper group, the previous [CUE] key status of the group immediately below will be restored.




For example if you switch groups in the order of OUTPUT CUE group → DCA CUE group → INPUT CUE group → Other CUE group, you can then successively defeat the [CUE] keys (CUE/KEY IN CUE buttons) to successively restore the [CUE] key status of the previously selected group.

# Operating the Cue function

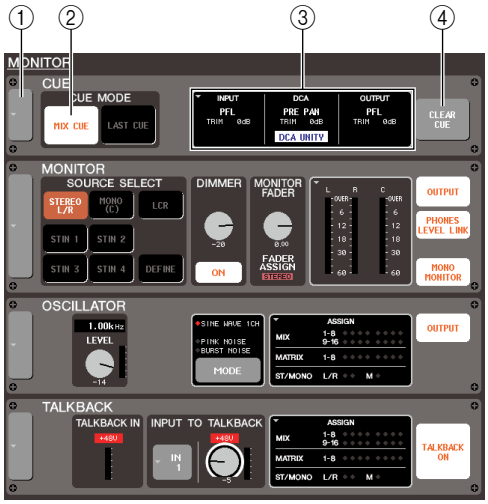
This section explains how you can use the [CUE] key of a desired channel or DCA group to monitor the Cue signal.

NOTE

- *The cue signal is sent to the same output destination as the monitor signal. Be aware that for this reason, the cue signal will not be sent to the connected monitor speakers if you turn off the Monitor function. However, PHONES OUT jack under the front pad will always output the cue signal regardless of the Monitor on/off setting. For details on Monitor function settings, refer to "Using the Monitor function" (→ p. 154).*

## 1 In the function access area, press the MONITOR button to access the MONITOR screen.

The CUE field of the MONITOR screen lets you check the current Cue settings, and turn Cue on/off.




### ① Popup button

Opens the CUE popup window, where you can make detailed settings for Cue.

### ② CUE MODE field

Specifies how the Cue function will operate.

### ③ INPUT/DCA/OUTPUT field

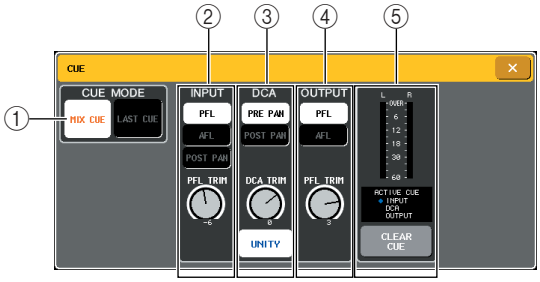
For each CUE group, this indicates the signal output position and the output level. You can press this field to open the CUE popup window.

### ④ CLEAR CUE button

Clears all Cue selections.

## 2 Press the popup button or the INPUT/DCA/OUTPUT field to open the CUE popup window.

The popup window includes the following items.




### ① CUE MODE field

This specifies the mode of operation when multiple [CUE] keys within the same group are turned on. This operation can also be performed in the CUE MODE field of the MONITOR screen.

### ② INPUT field

Here you can select one of the following positions from which input channels will be cued.

- **PFL (Pre-Fader Listen) button**
  ..... The pre-fader signal will be output.
- **AFL (After-Fader Listen) button**
  ..... The post-fader signal will be output.
- **POST PAN button**
  ..... The post-pan signal will be output.
- **PFL TRIM knob**
  ..... If PFL is selected, you can adjust the output level of the cue signal in a range of -20 dB– +10 dB. You can operate this knob using multifunction encoder 3.

NOTE

- *Be aware that if you turn the POST PAN button on, you will be unable to monitor the signal sent to the MONO bus from an input channel that is set to LCR mode.*

### ③ DCA field

Here you can select the position from which Cue will be output from DCA groups, and specify the output level.

- **PRE PAN button**
  ..... The pre-pan signal will be output
- **POST PAN button**
  ..... The post-pan signal will be output

- **DCA TRIM knob**

  .....Adjusts the level of cue output from a DCA group in a range of -20 dB–+10 dB. You can operate this knob using multifunction encoder 4.

- **DCA UNITY button**

  .....If this button is on, pressing the [CUE] key of a DCA group will always monitor the corresponding DCA group at unity gain (the same level at when the fader in the Centralogic section is at 0 dB).

### ④ OUTPUT field

Here you can select one of the following choices as the position from which output channels will be cued.

- **PFL (Pre-Fader Listen) button**

  .....The pre-fader signal will be output

- **AFL (After-Fader Listen) button**

  .....The signal immediately after the [ON] key will be output

- **PFL TRIM knob**

  .....If you select PFL, you can also use the PFL TRIM knob located in the lower part of this field to adjust the output level in a range of -20 dB–+10 dB. You can operate this knob using multifunction encoder 5.

### ⑤ Meter field

- **Level meter** ....This indicates the level of the cue signal.
- **ACTIVE CUE indicator**

  .....This indicates the currently-active Cue group.

- **CLEAR CUE button**

  .....Clears all Cue selections. This operation can also be performed using the CLEAR CUE button in the MONITOR screen.

## 3 Use the buttons of the CUE MODE section to specify what will happen when multiple [CUE] keys within the same CUE group are turned on.

Use the following two buttons to choose the Cue mode.

● **MIX CUE button**
All channels or DCA groups within the same Cue group whose [CUE] key is on will be mixed for monitoring (MIX CUE mode).

● **LAST CUE button**
Only the channel or DCA group whose [CUE] key was last turned on will be monitored (LAST CUE mode).

HINT

*• [CUE] keys belonging to different Cue groups cannot be turned on simultaneously. The Cue group to which the last-pressed [CUE] key belongs will be turned on, allowing only the signals of that group to be monitored.*

## 4 Use the buttons and knobs of the INPUT field, DCA field, and OUTPUT field to specify the output position and output level for each Cue group.

Refer to the explanation for each item in step 2, and make the desired settings.

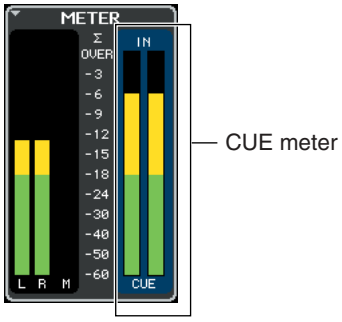
## 5 Press the [CUE] key of a desired channel or DCA group to turn it on.

The Cue signal of the corresponding channel will be sent to the monitor signal output destination.

The background of the Cue meter in the function access area will turn blue, indicating the Cue output level. An abbreviation of the currently-on Cue group or button is shown above the Cue meter.

The abbreviations displayed for the Cue meter have the following meaning.

| | |
|---|---|
| **IN** | INPUT CUE group |
| **DCA** | DCA CUE group |
| **OUT** | OUTPUT CUE group |
| **EFFECT** | CUE button in the EFFECT popup window (Other cue group) |
| **KEY IN** | KEY IN CUE button of the DYNAMICS 1 popup window (Other cue group) |




HINT

*• When using the MIX or MATRIX bus select buttons in the SENDS ON FADER popup window, you can press the selected button once again to turn on Cue for the corresponding MIX or MATRIX channel (→ p. 70).*

*• If you want Cue operations and channel select operations to be linked, open the USER SETUP popup window, choose the PREFERENCE tab, and turn "[CUE]>[SEL] LINK" on (→ p. 214).*

## 6 To adjust the Cue signal level, use the MONITOR LEVEL knob located in the SCENE MEMORY/MONITOR section of the top panel.

If PHONES LEVEL LINK is ON, you can use both the MONITOR LEVEL knob and the PHONES LEVEL knob to adjust the Cue signal level when monitoring through headphones.

### 7 To defeat Cue, press the currently-on [CUE] key once again.

You can press the CLEAR CUE button in the Meter field to clear all Cue selections.

HINT

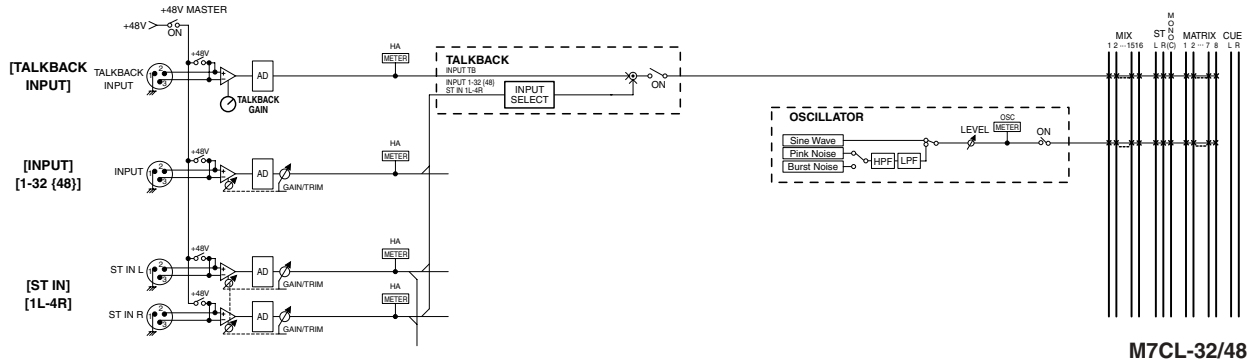
- *If you press the CUE meter in the function access area, all Cue selections will be cleared.*
- *All Cue selections will be cleared if you switch between MIX CUE mode and LAST CUE mode in the CUE MODE section.*
- *You can also assign the same function as the CLEAR CUE button to a user-defined key (→ p. 216).*

# ◆ Chapter 14 ◆
# Talkback / Oscillator

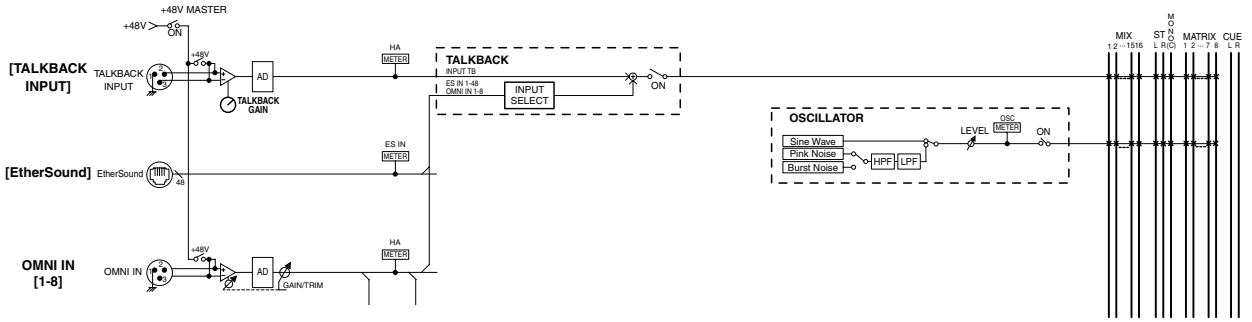
This chapter explains how to use talkback and oscillator.

## About the talkback and oscillator functions

Talkback is a function that sends the signal of a mic connected to the TALKBACK jack to the desired bus. This is used mainly to convey instructions from the mixing engineer to the performers or staff. If necessary, a mic connected to INPUT jacks, ST IN jacks, and OMNI IN jacks can also be used for talkback.
The M7CL also contains an oscillator that can output a sine wave or pink noise to the desired bus, and this can be used to check external equipment or to test the acoustical response of the room.
The diagram below shows the signal flow of the talkback/oscillator signals.




M7CL-32/48




M7CL-48ES

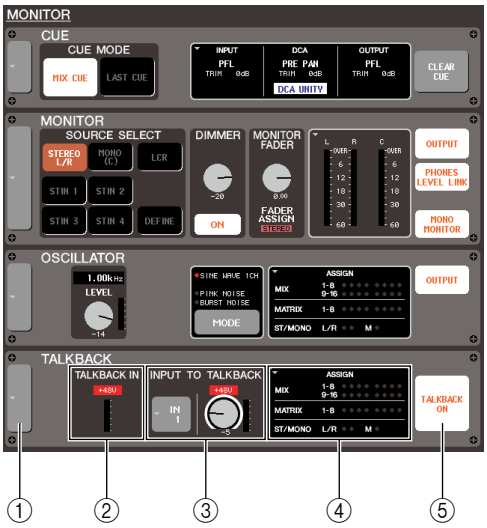
# Using talkback

The Talkback function sends the signal (that is input at the input jacks) to the desired bus.

## 1 In the function access area, press the MONITOR button to access the MONITOR screen.

In the MONITOR screen, the TALKBACK field lets you check the current talkback settings, and turn talkback on/off.

If you want to view or edit the talkback settings in greater detail, use the TALKBACK popup window described in step 2 and following.




### ① Popup button

Opens the TALKBACK popup window.

### ② TALKBACK IN field

This indicates the input level of the mic connected to the TALKBACK jack, and the phantom power on/off status.

### ③ INPUT TO TALKBACK field

This field indicates the input sensitivity, input level, and phantom power on/off status of the INPUT, ST IN and OMNI IN jacks that are being used for talkback. You can use the buttons located at the left of this field to select a jack used for talkback. If you press the GAIN knob in this field to select it, you will be able to use the corresponding multifunction encoder to adjust the input sensitivity.

### ④ ASSIGN field

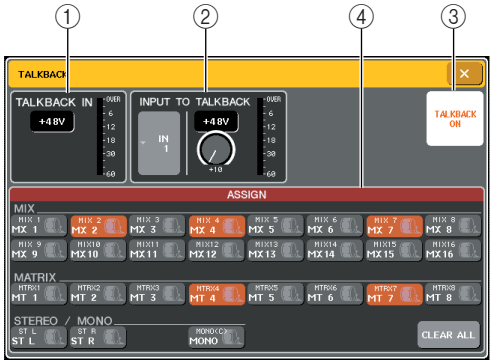
Indicates the bus to which the talkback signal is sent. You can press this field to open the TALKBACK popup window.

### ⑤ TALKBACK ON button

Switches talkback on/off.

## 2 Press the popup button or the ASSIGN field to open the TALKBACK popup window.

In this popup window you can make detailed settings for talkback.




### ① TALKBACK IN field

- **+48V button**... This is an on/off switch for the phantom power (+48V) supplied to the TALKBACK jack.
- **TALKBACK jack level**
  ..... This indicates the input level of the mic connected to the TALKBACK jack.

### ② INPUT TO TALKBACK field

- **Input select button**
  ..... Opens the INPUT PORT SELECT popup window, where you can select an INPUT jack other than the TALKBACK jack used for talkback.
- **+48V button**
  ..... This is an on/off switch for the phantom power (+48V) supplied to the INPUT jack used for talkback.
- **GAIN knob**..... Adjusts the input sensitivity of the INPUT jack used for talkback. Use the corresponding multifunction encoder to make this adjustment. You can also use the MONITOR screen GAIN knob to adjust this.
- **Input level**..... Indicates the input level of the mic connected to the INPUT jack used for talkback.

### ③ TALKBACK ON button

Switches talkback on/off. This operation can also be performed using the MONITOR screen TALKBACK ON button.

### ④ ASSIGN field

Selects the bus(es) to which the talkback signal will be sent. You can press the CLEAR ALL button to defeat all selections.

### 3 Connect a mic to the front panel TALKBACK jack, and turn the TALKBACK GAIN knob to adjust the input sensitivity of the mic.

The meter in the TALKBACK IN field indicates the input level of the mic connected to the TALKBACK jack. If you want phantom power (+48V) to be supplied to the TALKBACK jack, turn on the +48V button located in the TALKBACK IN field.

### 4 If you want to use an input jack other than the TALKBACK jack as supplementary input for talkback, follow the steps below.

1. **Press the INPUT TO TALKBACK field INPUT select button to open the INPUT PORT SELECT popup window.**
2. **Press the button for the input you want to use for talkback to turn the button indicator on.**
   You can select only one input at a time.
3. **Press the CLOSE button to close the popup window.**
   Use the INPUT TO TALKBACK field GAIN knob and level meter to adjust the input level of the connected mic.

NOTE

- *The PAD will be internally switched on or off when the HA gain is adjusted between -14 dB and -13 dB. Keep in mind that noise may be generated if there is a difference between the Hot and Cold output impedance of the external device connected to the INPUT connector when using phantom power.*

### 5 Press a button in the ASSIGN field to specify the bus(es) to which the talkback signal will be sent (multiple selections are allowed).

These buttons correspond to the following buses.

| | |
|---|---|
| **MIX 1–16 buttons** | MIX buses 1–16 |
| **MTRX 1–8 buttons** | MATRIX buses 1–8 |
| **ST L, ST R buttons** | STEREO bus L/R |
| **MONO (C) button** | MONO bus |

HINT

- *You can press the CLEAR ALL button to defeat all selections.*

### 6 To enable talkback, press the TALKBACK ON button to turn it on.

The TALKBACK ON button will alternately turn on/off each time you press the button (Latch operation).

While talkback is on, the signal from the TALKBACK jack and the selected INPUT jack will be output to the destination bus.

HINT

- *You can also assign talkback on/off or an ASSIGN change to a user-defined key. In this case, you can select either latched operation or unlatched operation (the function will be on only while you continue holding down the key) (→ p. 216).*
- *When talkback is on, you can use the talkback dimmer to lower the monitor levels other than talkback (→ p. 155).*

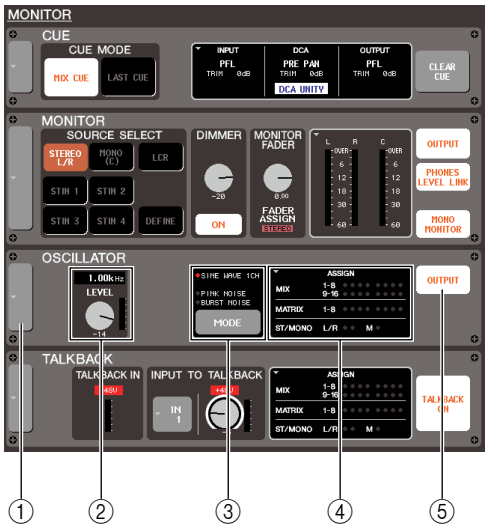
# Using the oscillator

Here's how to send a sine wave or pink noise from the internal oscillator to a desired bus.

## 1 In the function access area, press the MONITOR button to access the MONITOR screen.

In the MONITOR screen, the OSCILLATOR field lets you check the current oscillator settings, and turn the oscillator on/off.

If you want to view or edit the oscillator settings in greater detail, use the OSCILLATOR popup window described in step 2 and following.




### ① Popup button

Opens the OSCILLATOR popup window.

### ② LEVEL knob

This adjusts the output level of the oscillator. If you press the knob to select it, you'll be able to operate it using the corresponding multifunction encoder.

### ③ MODE button

This selects the type of oscillator signal. The type will change each time you press the button.

### ④ ASSIGN field

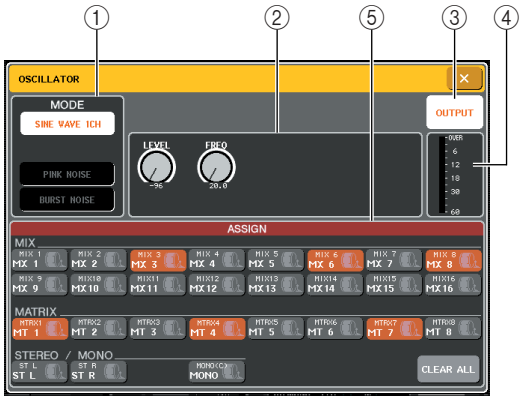
Indicates the bus to which the oscillator signal is sent. You can press this field to open the OSCILLATOR popup window.

### ⑤ OUTPUT button

Turns the oscillator on/off.

## 2 Press the popup button or the ASSIGN field to open the OSCILLATOR popup window.

In this popup window you can make detailed settings for the oscillator.




### ① MODE field

Press a button in this field to select the type of oscillator. This operation can also be performed using the MODE button in the MONITOR screen.

### ② Parameter field

Here you can adjust the parameters for the oscillator you selected in the MODE field. The knobs shown in this field can be operated using the corresponding multifunction encoders.

### ③ OUTPUT button

Turns the oscillator on/off. This operation can also be performed using the OUTPUT button in the MONITOR screen.

When the power is turned off, the oscillator will be turned off.

### ④ Oscillator level

This indicates the output level of the oscillator.

### ⑤ ASSIGN field

Selects the bus(es) to which the oscillator signal will be sent. You can press the CLEAR ALL button to defeat all selections.

## 3 Press a button in the MODE field to select the type of signal you want to output.

You can choose the following signals.

| | |
|---|---|
| **SINE WAVE 1CH** | Single-channel sine wave |
| **PINK NOISE** | Pink noise |
| **BURST NOISE** | Burst noise (repeated output of pink noise) |

## 4 Use the knobs and buttons in the parameter field to adjust the oscillator parameters.

The displayed parameters will differ depending on the oscillator selected in the MODE field. The knobs shown in the parameter field can be operated using the corresponding multifunction encoders.

The following table shows the available oscillator types and the parameters displayed for each type.

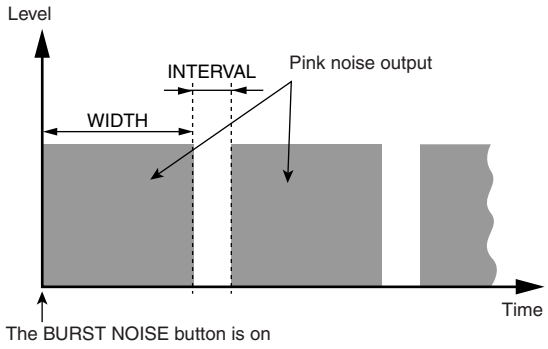
| Oscillator type | Parameters |
|---|---|
| **SINE WAVE 1CH** | LEVEL, FREQ |
| **PINK NOISE** | LEVEL, HPF, LPF |
| **BURST NOISE** | LEVEL, HPF, LPF, WIDTH, INTERVAL |

HINT

*• The "LEVEL" parameter can also be adjusted using the LEVEL knob in the MONITOR screen.*

Details of each parameter are shown in the following table.

| Parameters | Details |
|---|---|
| **LEVEL** | Oscillator output level |
| **FREQ** | Frequency of the sine wave output from the oscillator |
| **HPF** | High-pass filter (on/off switch, cutoff frequency) |
| **LPF** | Low-pass filter (on/off switch, cutoff frequency) |
| **WIDTH** | Length of noise |
| **INTERVAL** | Length of silence between intervals of noise |




## 5 Press a button in the ASSIGN field to specify the bus(es) to which the oscillator signal will be sent (multiple selections are allowed).

These buttons correspond to the following buses.

| | |
|---|---|
| **MIX 1–16 buttons** | MIX buses 1–16 |
| **MTRX 1–8 buttons** | MATRIX buses 1–8 |
| **ST L, ST R buttons** | STEREO bus L/R |
| **MONO (C) button** | MONO bus |

HINT

*• You can press the CLEAR ALL button to defeat all selections.*

## 6 To enable the oscillator, press the OUTPUT button to turn it on.

The oscillator signal will be sent to the bus you selected in step 5. When you press the button again, the oscillator will turn off.

HINT

*• You can also assign oscillator on/off or an ASSIGN change to a user-defined key (→ p. 216).*

# Chapter 15
# Meters

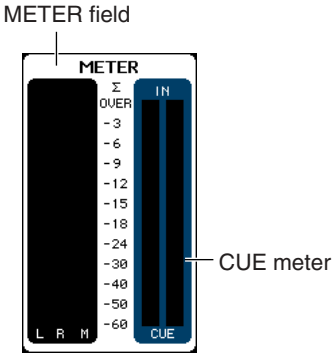
This chapter explains the METER screen that shows the input/output level meters for all channels, and operations relating to the optional MBM7CL meter bridge.

## Operations in the METER screen

By accessing the METER screen, you can view the input/output levels of all channels in the screen, or switch the level meter's metering points (the points in the signal route at which the level is detected).

**1 In the function access area, press the METER field to access the METER screen.**

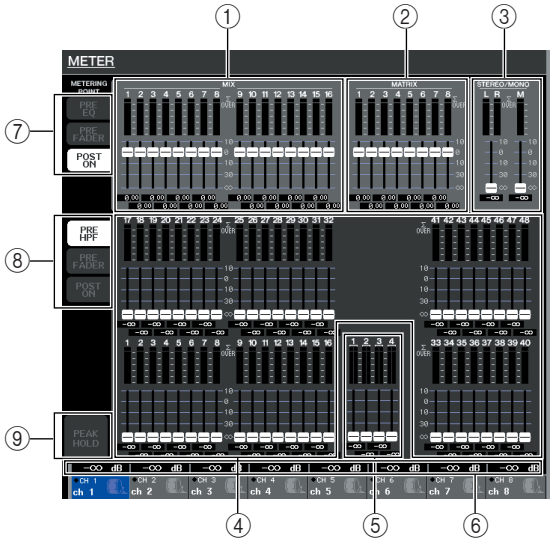
The METER screen will appear, and the background of the METER field will turn white.




NOTE

- *If the CUE meter is shown in the METER field, pressing the CUE meter will forcibly defeat the cue that is currently turned on.*
- *If the CUE meter is not shown in the METER field, pressing the CUE meter will switch to the METER screen.*

**[METER screen]**




### ① MIX channels

This area indicates the output levels and fader values of the MIX channels. If the corresponding MIX channels are assigned to the Centralogic section, operating the faders of the Centralogic section will change these values in realtime.

### ② MATRIX channels

This area indicates the output levels and fader values of the MATRIX channels. If the MATRIX channels are assigned to the Centralogic section, operating the faders of the Centralogic section will change these values in realtime.

### ③ STEREO channel L/R, MONO channel

This area indicates the output levels and fader values of the STEREO channel L/R and MONO channel. Operating the corresponding fader will change the value in realtime.

### ④ INPUT channels

This area indicates the input levels and fader values of the INPUT channels. Operating the corresponding fader will change the value in realtime.

### ⑤ ST IN channels

This area indicates the input levels and fader values of the ST IN channels. Operating the corresponding fader will change the value in realtime.

### ⑥ Centralogic fader levels

This area indicates the fader values of the channel/DCA group assigned to the Centralogic section. Operating the corresponding fader will change the value in realtime.

### ⑦ Metering point select buttons (for output channels)

Use these three buttons to select the metering point for output channels.

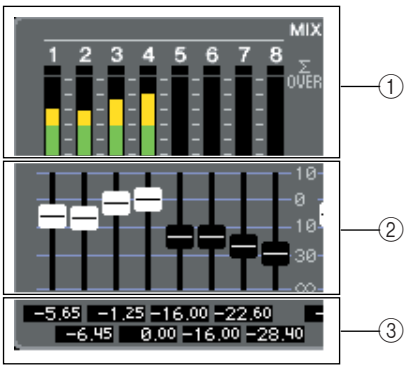
### ⑧ Metering point select buttons (for input channels)

Use these three buttons to select the metering point for input channels.

### ⑨ PEAK HOLD button

If this button is on, the peak level of the meters will be held. When you turn this button off, the peak level indication that had been held will be cleared.

In the METER screen you can view the following information for each channel.




### ① Level meter

This is a realtime indication of the input (or output) level of the corresponding channel.

The ∑ segment will light if any of the level detection points in each channel reach the OVER level.

The ∑ segment level detection points are as follows.

- **Input channels**
  .....PRE HPF, PRE FADER, POST ON
- **Output channels**
  .....PRE EQ, PRE FADER, POST ON

HINT

- *If ∑ is lit, you can switch the metering point to determine the point at which the overload is occurring.*

### ② Fader

This is a real-time indication of the fader position and on/off status of each channel. The fader in the screen cannot be operated.

### ③ Fader level

This indicates the current fader value in a range of -∞ to 10.

## 2 If necessary, you can press a metering point select button to switch the metering point.

The metering point for the level meter can be specified independently for input channels and output channels.

You can choose the following metering points.

● **Input channels**

- **PRE HPF**..... Immediately before the high-pass filter
- **PRE FADER**... Immediately before the fader
- **POST ON** ..... Immediately after the [ON] key

● **Output channels**

- **PRE EQ**..... Immediately before the attenuator
- **PRE FADER**... Immediately before the fader
- **POST ON** ..... Immediately after the [ON] key

HINT

- *The metering point for output channels will also affect the optional meter bridge (MBM7CL).*

## 3 If you want the peak levels of the level meter to be held, press the PEAK HOLD button to turn it on.

PEAK HOLD button on/off operations will affect both input channels and output channels as well as the MBM7CL meter bridge. When you turn this button off, the peak level indication that had been held will be cleared.

HINT

- *You can also assign the PEAK HOLD button on/off function to a user-defined key (→ p. 216).*

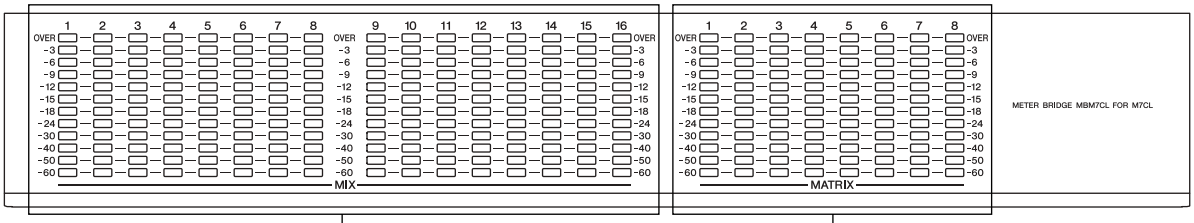
# Using the MBM7CL meter bridge (option)

If the optional meter bridge (MBM7CL) is installed in the M7CL, you will always be able to view the output levels of MIX channels and MATRIX channels.

The MBM7CL's meters show the MIX channel and MATRIX channel output levels in 12-segment steps (OVER, -3dB, -6dB, -9dB, -12dB, -15dB, -18dB, -24dB, -30dB, -40dB, -50dB, -60dB).

You can select the metering point (the point at which the level is detected) from the following choices. To change the metering point, refer to the preceding section "Operations in the METER screen" (→ p. 168).

- **PRE EQ**..... Immediately before the attenuator
- **PRE FADER**... Immediately before the fader
- **POST ON**..... Immediately after the [ON] key




MIX channels

MATRIX channels

HINT

*• For details on installing the meter bridge (MBM7CL), refer to p. 300.*

# ◆ Chapter 16 ◆
# Graphic EQ and effects

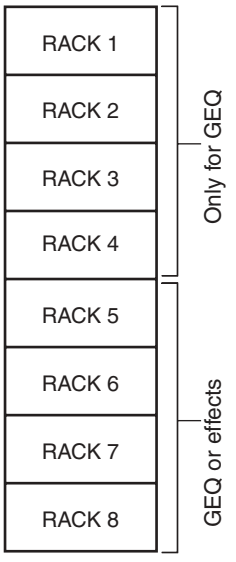
This chapter explains how to use the built-in graphic EQ and effects, and how to perform remote control operations via the dedicated protocol to control an external head amp (e.g, Yamaha AD8HR, SB168-ES) from the M7CL.

## About the virtual rack

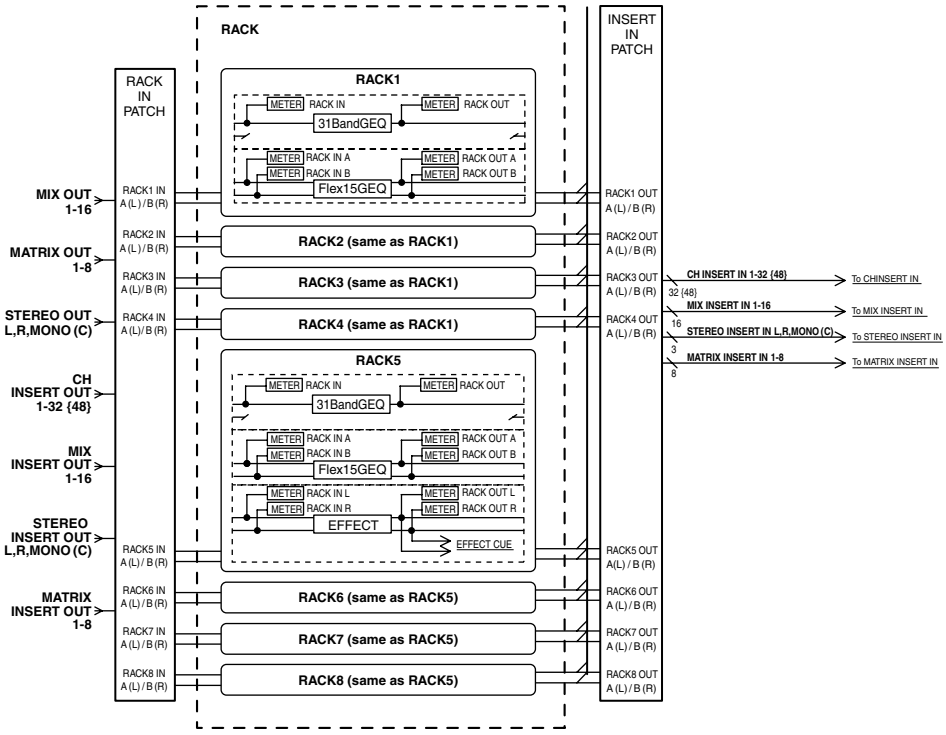
The M7CL lets you use the built-in graphic EQ (subsequently abbreviated as “GEQ”) and effects to modify signals. You can use two types of GEQ; 31BandGEQ which lets you freely adjust thirty-one bands (frequency regions), and Flex15GEQ which lets you adjust any fifteen of thirty-one bands. You can also use 54 different effect types.

In order to use a GEQ or effect, you must mount the GEQ or effect in one of the eight virtual racks, and patch the input and output of that rack to the desired signal route. In other words, the operation is just as though you had installed a signal processor or effect device in an actual rack, and used patch cords to connect it. Only GEQ can be mounted in racks 1–4, and either GEQ or effects can be mounted in racks 5–8. **[Figure 1]**

Up to two channels of input and output can be used for each rack. (However if the “31BandGEQ” is mounted in a rack, there will be only one channel each for input and output.) **[Figure 2]** shows the signal flow for the virtual racks.




**[Figure 1]**


RACK
RACK IN PATCH
INSERT IN PATCH
RACK1
METER RACK IN
METER RACK OUT
31BandGEQ
METER RACK IN A
METER RACK IN B
METER RACK OUT A
METER RACK OUT B
Flex15GEQ
METER RACK IN L
METER RACK IN R
METER RACK OUT L
METER RACK OUT R
EFFECT
EFFECT CUE
MIX OUT 1-16
MATRIX OUT 1-8
STEREO OUT L,R,MONO (C)
CH INSERT OUT 1-32 {48}
MIX INSERT OUT 1-16
STEREO INSERT OUT L,R,MONO (C)
MATRIX INSERT OUT 1-8
RACK1 IN A (L) / B (R)
RACK2 IN A (L) / B (R)
RACK3 IN A (L) / B (R)
RACK4 IN A (L) / B (R)
RACK5 IN A (L) / B (R)
RACK6 IN A (L) / B (R)
RACK7 IN A (L) / B (R)
RACK8 IN A (L) / B (R)
RACK2 (same as RACK1)
RACK3 (same as RACK1)
RACK4 (same as RACK1)
RACK5
RACK6 (same as RACK5)
RACK7 (same as RACK5)
RACK8 (same as RACK5)
RACK1 OUT A (L) / B (R)
RACK2 OUT A (L) / B (R)
RACK3 OUT A (L) / B (R)
RACK4 OUT A (L) / B (R)
RACK5 OUT A(L) / B (R)
RACK6 OUT A (L) / B (R)
RACK7 OUT A (L) / B (R)
RACK8 OUT A (L) / B (R)
CH INSERT IN 1-32 {48}
32 {48}
MIX INSERT IN 1-16
16
STEREO INSERT IN L,R,MONO (C)
3
MATRIX INSERT IN 1-8
8
To CHINSERT IN
To MIX INSERT IN
To STEREO INSERT IN
To MATRIX INSERT IN

**[Figure 2]**

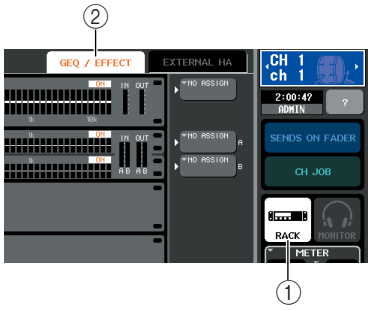
HINT

- *The M7CL provides a rack for mounting external head amps (e.g, Yamaha AD8HR, SB168-ES) as well as the virtual rack for GEQ and effects. For details, refer to “Using an external head amp” (→ p. 190).*

## Virtual rack operations

This section explains how to mount a GEQ or effect in the virtual rack, and patch the input/output of the rack.

### 1 In the function access area, press the RACK button to access the VIRTUAL RACK window.

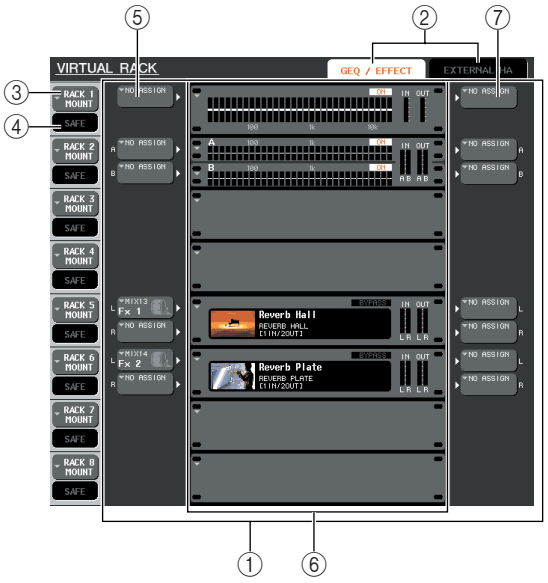



① **RACK button**

② **GEQ/EFFECT tab**

### 2 In the upper part of the VIRTUAL RACK window, press the GEQ/EFFECT tab to access the GEQ/EFFECT field.

In the VIRTUAL RACK window you can use the tabs to switch between two different fields. In this case, select the GEQ/EFFECT field.




① **GEQ/EFFECT field**

In this field you can mount GEQ or effects in racks 1–8, and edit the input/output patching for each rack.

② **Field select tabs**

Use these tabs to switch the field shown in the VIRTUAL RACK window. For details on the EXTERNAL HA field / EXT-ES HA field. Refer to “Using an external head amp” (→ p. 190).

③ **RACK MOUNT button**

This displays the RACK MOUNT popup window, where you can select an item to mount in the rack. Each of these buttons corresponds to the rack shown at the right.

④ **SAFE button**

This button switches Recall Safe on/off for the rack. Each of these buttons corresponds to the rack shown at the right.

⑤ **INPUT button**

This button displays the OUTPUT CH SELECT popup window, where you can select the input source for the rack.

⑥ **Virtual rack**

This area shows eight virtual racks in which GEQ or effects can be mounted. Racks 1–4 are only for GEQ, and either GEQ or effects can be mounted in racks 5–8. (However depending on the effect type, some can be mounted only in rack 5 or 7.)

The popup window that appears when you press a virtual rack will differ depending on whether a GEQ or effect is already mounted.

- **If you press a rack in which a GEQ or effect is already mounted**

  ..... The GEQ/EFFECT popup window will appear, allowing you to edit the parameters of the GEQ or effect.

- **If you press a rack that is empty**

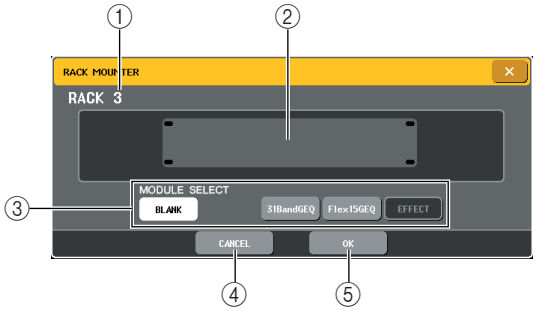
  ..... The RACK MOUNTER popup window will appear, allowing you to select the GEQ or effect that will be mounted in the rack.

⑦ **OUTPUT button**

This button displays the INPUT CH SELECT popup window, where you can select the output destination of the rack.

### 3 To mount a GEQ or effect in the rack, press the RACK MOUNT button for that rack.

The RACK MOUNTER popup window will appear.




① **Rack number**

This indicates the number of the selected rack.

② **Virtual rack**

This area indicates the GEQ or effect selected via the MODULE SELECT buttons.

### ③ MODULE SELECT

Use these buttons to select the GEQ or effect that will be mounted in the rack. Each button has the following function.

- **BLANK button**

  .....Removes the GEQ or effect currently mounted in the rack; the rack will be empty.

- **31BandGEQ button**

  .....Mounts a 31BandGEQ in the rack.

- **Flex15GEQ button**

  .....Mounts a Flex15GEQ in the rack.

- **EFFECT button**

  .....Mounts an effect in the rack. However, effects cannot be mounted in racks 1–4.

HINT

- *Input/output patching will be defeated when you change the item mounted in a rack.*

### ④ CANCEL button

Cancels the changes you made in the RACK MOUNTER popup window, and closes the window.

### ⑤ OK button

Applies the changes you made in the RACK MOUNTER popup window, and closes the window.

NOTE

- *Be aware that if you remove a GEQ or effect that was mounted in a rack and close the window, all parameter settings for that GEQ or effect will be discarded. If you have not yet closed the window, you can recover the parameter settings by mounting the same GEQ or effect once again.*

HINT

- *You can also display the RACK MOUNTER popup window by pressing a vacant rack in the GEQ/EFFECT field.*

## 4 Use the MODULE SELECT buttons to select the item you want to mount, and press the OK button.

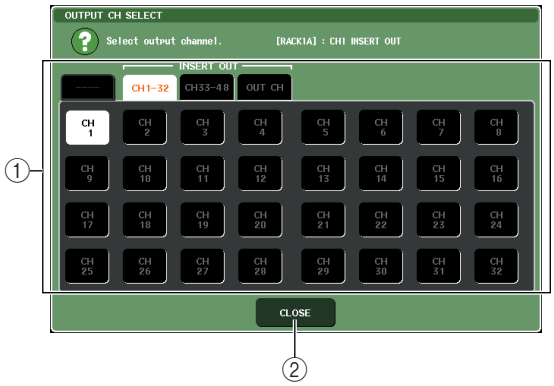
## 5 To select the input source for a rack, press the INPUT button for that rack.

The OUTPUT CH SELECT popup window will appear, allowing you to select the input source for the rack. Switch the tabs as necessary, and select the input source that you want to use.

When you select an input source in the OUTPUT CH SELECT popup window, a dialog box will ask you for confirmation. To confirm the operation, press the OK button.

HINT

- *You have the option of making settings so that the confirmation dialog box does not appear (→ p. 214).*
- *Normally you can specify two channels of input for each rack. However if you have selected 31BandGEQ, only one channel can be used.*




### ① Channel select buttons

Use these buttons to select the input source. Use the four tabs to switch between groups of input sources shown in the window.

### ② CLOSE button

Closes the popup window.

The following input sources can be selected in this popup window.

| Tab name | Button name | Input source |
|---|---|---|
| OUT CH (*1) | MIX 1–16 | MIX channel 1–16 outputs |
| | MATRIX 1–8 | MATRIX channel 1–8 outputs |
| | STEREO L, STEREO R, MONO (C) | STEREO (L/R) channel and MONO (C) channel outputs |
| CH 1-32 (INSERT OUT) | CH 1–32 | INPUT channel 1–32 Insert Outs |
| CH 33-48 (INSERT OUT) (M7CL-48/48ES only) | CH 33–48 | INPUT channel 33–48 Insert Outs |
| OUT CH (INSERT OUT) | MIX 1–16 | MIX channel 1–16 Insert Outs |
| | MATRIX 1–8 | MATRIX channel 1–8 Insert Outs |
| | STEREO L, STEREO R, MONO (C) | STEREO (L/R) channel and MONO (C) channel Insert Outs |

*1 Cannot be selected for 31BandGEQ or Flex15GEQ.

HINT

- *If a rack in which a GEQ is mounted is specified as the insert-out or insert-in, the other patch point will automatically be assigned to the same rack. Also, insert mode will automatically be switched on. Additionally, if you defeat the insert-out or insert-in of a rack in which a GEQ is mounted, the other patch point will automatically be defeated and at the same time insert mode will automatically be switched off. For details on Insert Out/In, refer to "Inserting an external device into a channel" (→ p. 110).*

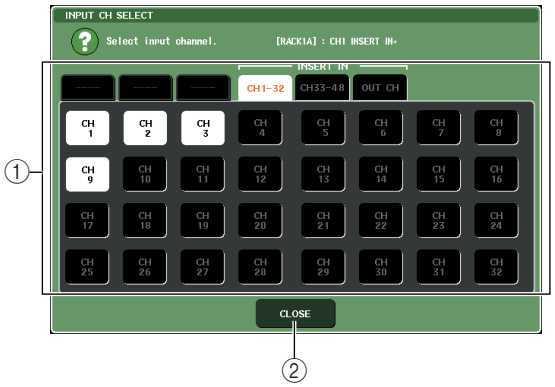
## 6 To select the output source for a rack, press the OUTPUT button for that rack.

The INPUT CH SELECT popup window will appear, allowing you to select the output destination for the rack. Switch the tabs as necessary, and select the output destination that you want to use.

When you select an output destination in the INPUT CH SELECT popup window, a dialog box will ask you to confirm the change. To confirm the change, press the OK button.

HINT

- *You have the option of making settings so that the confirmation dialog box does not appear (→ p. 214).*
- *You can specify multiple output destinations for a rack.*
- *Normally you will be able to specify two channels of output for a rack, but if the 31BandGEQ is selected only one channel can be used.*




### ① Channel select buttons

Use these buttons to select the output destination. Use the six tabs to switch between groups of output destinations shown in the window.

### ② CLOSE button

Closes the popup window.

The following output destinations can be selected in this popup window (multiple selections are allowed).

| Tab name | Button name | Output source |
|---|---|---|
| CH 1-32 (*1) | CH 1–32 | INPUT channel 1–32 inputs |
| CH 33-48 (M7CL-48/48ES only) (*1) | CH 33–48 | INPUT channel 33–48 inputs |
| STIN (*1) | STIN 1L/1R–4L/4R | ST IN channel 1–4 inputs |
| CH 1-32 (INSERT IN) | CH 1–32 | INPUT channel 1–32 Insert In |
| CH 33-48 (INSERT IN) (M7CL-48/48ES only) | CH 33–48 | INPUT channel 33–48 Insert In |
| OUT CH (INSERT IN) | MIX 1–16 | MIX channel 1–16 Insert In |
| | MATRIX 1–8 | MATRIX channel 1–8 Insert In |
| | STEREO L, STEREO R, MONO (C) | STEREO (L/R) channel and MONO (C) channel Insert In |

*1 Cannot be selected for 31BandGEQ or Flex15GEQ.

HINT

- *In the case of 31BandGEQ and Flex15GEQ, selecting Insert In as the output-destination will automatically set the Insert Out of the same channel as the input-source for the rack. When you defeat an insert-in, the insert-out will be defeated automatically.*

## 7 To switch Recall Safe on/off for each rack, press the SAFE button for that rack.

If Recall Safe is turned on for a rack, the contents and parameters of that rack will not change when a scene is recalled. For more about Recall Safe, refer to "Using the Recall Safe function" (→ p. 148).

HINT

- *The type of GEQ or effect mounted in each rack, its parameter settings, and the input-source/output-destination settings are saved as part of the scene.*

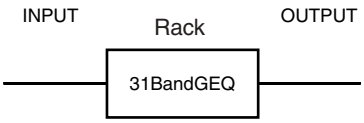
# Graphic EQ operations

## About the graphic EQ

The M7CL lets you mount a GEQ in racks 1–8 and patch it to the insert-out/in of a channel. The gain of each band can be adjusted using the Centralogic section's faders and [ON] keys.
The following two types of GEQ are provided.

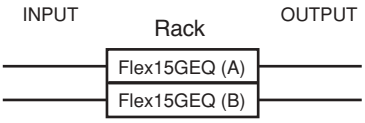
- **31BandGEQ**

  .....This is a monaural 31-band GEQ. Each band is 1/3 octave wide, the adjustable gain range is ±15 dB, and the gain of all thirty-one bands can be adjusted. If a 31BandGEQ is mounted in a rack, one channel of input and output can be used for that rack.




- **Flex15GEQ**

  .....This is a monaural 15-band GEQ. Each band is 1/3 octave wide, and the adjustable gain range is ±15 dB. The Flex15GEQ lets you adjust the gain for any fifteen of the same bands as the thirty-one bands of the 31BandGEQ. (Once you've used up fifteen bands of adjustment, you won't be able to adjust the gain of another band until you reset a previously-adjusted band to the flat setting.)
  A rack for which the Flex15GEQ is selected will have two Flex15GEQ units (shown as "A" and "B" respectively) mounted in that rack, and will allow two channels of input and output. If you mount a Flex15GEQ in each rack, you'll be able to use up to sixteen GEQ units simultaneously.

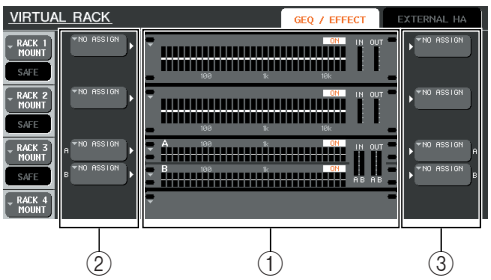



## Inserting a GEQ in a channel

The M7CL's GEQ units can be patched to the insert-in/out of any channel except the ST IN channels. Here's how to insert a GEQ into the selected channel for use.

### 1 As described in "Virtual rack operations" (→ p. 172) steps 1–6, mount a GEQ in a rack and set its input source and output destination.

The rack shown in the GEQ/EFFECT field indicates the approximate GEQ settings and the input/output levels. A rack in which a Flex15GEQ is mounted will show information for two GEQ units (A and B).




① **Racks**
② **INPUT buttons**
③ **OUTPUT buttons**

HINT

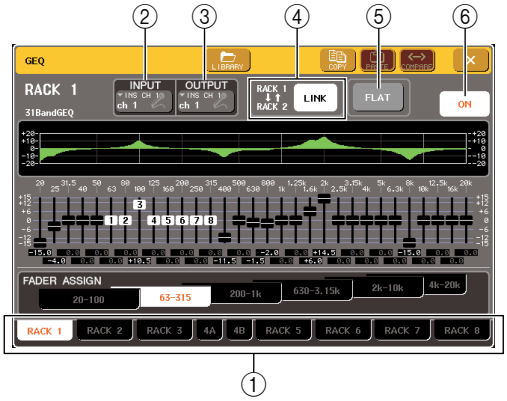
*• If you're using a stereo source, you can mount a Flex15GEQ, or mount two 31BandGEQ units in adjacent odd-numbered/even-numbered racks. This will let you link the two GEQ units in a later step.*

### 2 In the GEQ/EFFECT field, press the rack in which you mounted the GEQ.

The GEQ popup window will appear, allowing you to edit the parameters of the GEQ.

HINT

*• The popup windows for the 31BandGEQ and the Flex15GEQ are nearly identical. However, the Flex15GEQ individually displays two GEQ units (A and B) mounted in a single rack.*



### ① Rack select tabs
These tabs switch between racks 1–8. For a rack in which a Flex15GEQ is mounted, the tabs will be split as xA and xB (x is the rack number).

### ② INPUT button
This button displays the OUTPUT CH SELECT popup window, where you can select the input source of the rack. The operating procedure is the same as for the INPUT button in the GEQ/EFFECT field.

### ③ OUTPUT button
This button displays the INPUT CH SELECT popup window, where you can select the output destination of the rack. The operating procedure is the same as for the OUTPUT button in the GEQ/EFFECT field.

### ④ GEQ LINK button
This button links adjacent GEQ units. In the case of a 31BandGEQ, the GEQ units in adjacent odd-numbered/even-numbered racks will be linked. In the case of a Flex15GEQ, the GEQ (A) and GEQ (B) within the same rack will be linked.

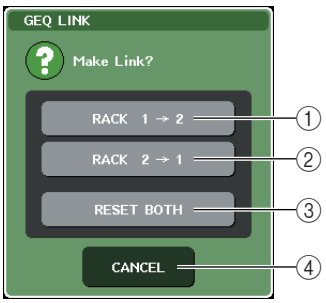
NOTE

- *The GEQ LINK button is shown only if linking is possible.*

### ⑤ FLAT button
This returns all bands of the currently selected GEQ to 0 dB.

### ⑥ GEQ ON/OFF button
Switches the currently selected GEQ on/off.

## 3 If you're using a stereo source, link the two GEQ units.
You will be able to use the GEQ LINK button if you have selected a 31BandGEQ or Flex15GEQ for adjacent odd-numbered/even-numbered racks. When you turn this button on, the following popup window will appear. To enable linking, press any button other than CANCEL. The popup window contains the following items.



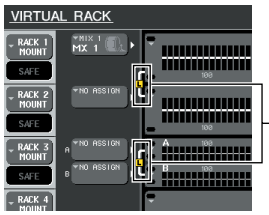

### ① GEQ x→y button ("x" and "y" are the rack number, or the rack number and the alphabetical characters A or B)
The parameters of "x" will be copied to "y," and then linked.

### ② GEQ y→x button
The parameters of "y" will be copied to "x," and then linked.

### ③ RESET BOTH button
The parameters of both will be initialized, and then linked.

### ④ CANCEL button
Cancels the link and closes the popup window.

When you link GEQ units, a symbol will appear in the GEQ/EFFECT field to indicate the linked status.




## 4 Press the GEQ ON/OFF button to turn the GEQ on.
After you've turned the GEQ on, adjust the bands of the GEQ. For details on operating the GEQ, refer to "Using the 31BandGEQ" that follows or "Using the Flex15GEQ" (→ p. 178).

HINT

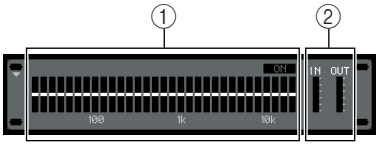
- *The rack in the GEQ/EFFECT field shows the input/output levels of the GEQ.*

## Using the 31BandGEQ

You will use the Centralogic section's faders 1–8 and [ON] keys to control the 31BandGEQ.

### 1 Refer to steps 1–6 in the "Virtual rack operations" (→ p. 172) to mount a 31BandGEQ in a rack and set its input source and output destination.

The rack in which the 31BandGEQ is mounted will show the approximate settings and input/output levels.



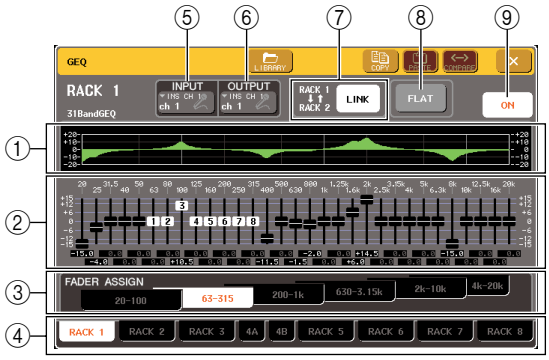

**① Rack graphic display area**

**② Input/output meters**

This indicates the level of the signals before and after the 31BandGEQ.

### 2 In the GEQ/EFFECT field, press the rack in which you mounted the 31BandGEQ.

The GEQ popup window will appear. In the GEQ popup window you can use the tabs to switch between the eight racks.




**① EQ graph**

This indicates the approximate response of the current 31BandGEQ settings.

**② Faders**

These faders indicate the amount of boost/cut for each band of the 31BandGEQ. The actual values are shown in the numerical boxes below.

**③ FADER ASSIGN field**

In this field you can select the group of bands that will be controlled by the Centralogic section's faders.

**④ Rack select tabs**

These tabs switch between racks 1–8. For a rack in which a Flex15GEQ is mounted, the tabs will be split as xA and xB (x is the rack number).

**⑤ INPUT button**

This button displays the OUTPUT CH SELECT popup window, where you can select the input source of the rack.

**⑥ OUTPUT button**

This button displays the INPUT CH SELECT popup window, where you can select the output destination of the rack.

**⑦ GEQ LINK button**

This button links adjacent GEQ units. In the case of a 31BandGEQ, the GEQ units in adjacent odd-numbered/even-numbered racks will be linked.

NOTE

- *The GEQ LINK button is shown only if linking is possible.*

**⑧ FLAT button**

This returns all bands of the currently selected GEQ to 0 dB.

**⑨ GEQ ON/OFF button**

Switches the currently selected GEQ on/off.

### 3 Press the GEQ ON/OFF button to turn on the 31BandGEQ.

### 4 Press one of the buttons in the FADER ASSIGN field to select the group of bands you will control using the Centralogic section's faders.

The buttons of the FADER ASSIGN field correspond to the following groups of bands.

| Button name | Bands |
|---|---|
| **20-100 button** | The eight bands 20.0 Hz–100 Hz |
| **63-315 button** | The eight bands 63.0 Hz–315 Hz |
| **200-1k button** | The eight bands 200 Hz–1.00 kHz |
| **630-3.15k button** | The eight bands 630 Hz–3.15 kHz |
| **2k-10k button** | The eight bands 2.00 kHz–10.0 kHz |
| **4k-20k button** | The eight bands 4.00 kHz–20.0 kHz |

When you press one of these buttons, the faders for the bands selected on the screen will turn white, and the numbers of the corresponding faders in the Centralogic section will be displayed.

HINT

- *The above operation is possible even if the Centralogic section is locked. When you turn off the button in the FADER ASSIGN field, it will return to the locked state.*

### 5 Operate the faders of the Centralogic section.

The corresponding frequency region will be boosted or cut.

HINT

- *When a fader of the Centralogic section is in the center (flat) position, the corresponding [ON] key will go dark. This indicates that the corresponding band is not being modified. If you raise or lower the fader even lightly, the [ON] key will light, indicating that this band is being modified. If you press a lit [ON] key to make it go dark, the corresponding band will immediately return to the flat state.*

**6 Repeat steps 4 and 5 to adjust each band.**

HINT

- *If you switch the display to a different screen or rack, the fader assignments of the Centralogic section will forcibly be defeated. However if you once again display the same rack, the group of bands you had previously been controlling will automatically be assigned to the faders.*

**7 When you've finished making settings, turn off the buttons of the FADER ASSIGN field.**

The faders and [ON] keys of the Centralogic section will return to their previous function.

HINT

- *When you close the GEQ popup window, the buttons in the FADER ASSIGN field automatically turn off.*

**8 If you want to copy the currently-displayed 31BandGEQ settings to the 31BandGEQ of another rack, or to initialize the settings, you can do so using the tool buttons at the top of the popup window.**

For details on how to use these buttons, refer to "Using the tool buttons" (→ p. 35).

NOTE

- *Only 31BandGEQ settings that use less than fifteen bands can be copied to a Flex15GEQ.*

HINT

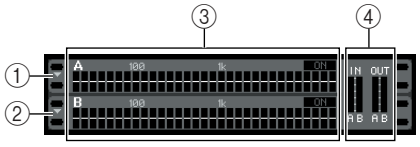
- *GEQ settings can be saved/loaded at any time using the dedicated library (→ p. 35).*

## Using the Flex15GEQ

You will use the Centralogic section's faders 1–8 and [ON] keys to control the Flex15GEQ.

**1 Refer to steps 1–6 in the "Virtual rack operations" (→ p. 172) to mount a Flex15GEQ in a rack and set its input source and output destination.**

A rack in which a Flex15GEQ is mounted will show information for two GEQ units (A and B).




① **GEQ (A)**
② **GEQ (B)**
③ **Rack graphic display area**
④ **Input/output meters**

This indicates the level of the signals before and after the Flex15GEQ. The levels for two GEQ units (A and B) are shown.

HINT

- *When you mount a Flex15GEQ, two monaural 31BandGEQ units are placed in a single rack. However, only up to fifteen bands can be adjusted for each unit.*

**2 Press the rack in which you mounted the Flex15GEQ.**

The GEQ popup window for GEQ (A) or GEQ (B) will appear.

① **EQ graph**

This indicates the approximate response of the current Flex15GEQ settings.

② **Faders**

These faders indicate the amount of boost/cut for each band of the Flex15GEQ. The actual values are shown in the numerical boxes below.

③ **FADER ASSIGN field**

In this field you can select the group of bands that will be controlled by the faders. "AVAILABLE BANDS" is a realtime indication of the remaining number of bands (maximum 15) that can be controlled for the current GEQ.

④ **Rack select tabs**
These tabs switch between racks 1–8. For a rack in which a Flex15GEQ is mounted, the tabs will be split as xA and xB (x is the rack number).

⑤ **FLAT button**
This returns all bands of the currently selected GEQ to 0 dB.

⑥ **GEQ ON/OFF button**
Switches the currently selected Flex15GEQ on/off. You can make settings independently for the two GEQ units (A and B) in the rack.

### 3 Press the GEQ ON/OFF button to turn on the Flex15GEQ.

### 4 Press one of the buttons in the FADER ASSIGN field to select the group of bands you will control using the Centralogic section's faders.

For details on the bands corresponding to each button in the FADER ASSIGN field, refer to step 4 of "Using the 31BandGEQ" (→ p. 177).

When you press one of these buttons, the faders for the bands selected on the screen will turn white, and the numbers of the corresponding faders in the Centralogic section will be displayed.

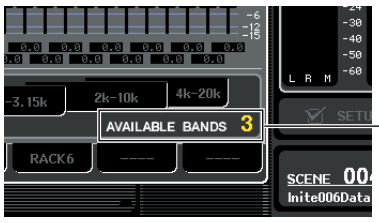
HINT

- *The above operation is possible even if the Centralogic section is locked. When you turn off the button in the FADER ASSIGN field, it will return to the locked state.*

### 5 Operate the faders of the Centralogic section.

For each of a Flex15GEQ's two GEQ units (A and B), a maximum of fifteen bands can be controlled.

The remaining number of bands that can be controlled is shown in realtime at the right of "AVAILABLE BANDS" in the FADER ASSIGN field. If you have used all fifteen bands, you will have to return one of these bands to the flat position before you can operate any other band.




Remaining number of bands

HINT

- *The [ON] key will light if you raise or lower a fader even the slightest amount. This indicates that the corresponding band is being modified.*
- *To quickly return a boosted or cut band to the flat position, press the corresponding [ON] key in the Centralogic section to make it go dark.*

### 6 Repeat steps 4 and 5 to adjust up to fifteen bands.

HINT

- *If you switch the display to a different screen, the fader assignments of the Centralogic section will forcibly be defeated. However if you once again display the same rack, the group of bands you had previously been controlling will automatically be assigned to the faders.*

### 7 When you've finished making settings, turn off the buttons of the FADER ASSIGN field.

The faders and [ON] keys of the Centralogic section will return to their previous function.

HINT

- *When you close the GEQ popup window, the buttons in the FADER ASSIGN field automatically turn off.*

### 8 If you want to copy the currently-displayed Flex15GEQ settings to the Flex15GEQ of another rack, or to initialize the settings, you can do so using the tool buttons at the top of the popup window.

For details on how to use these buttons, refer to "Using the tool buttons" (→ p. 35).

HINT

- *GEQ settings can be saved/loaded at any time using the dedicated library (→ p. 35).*

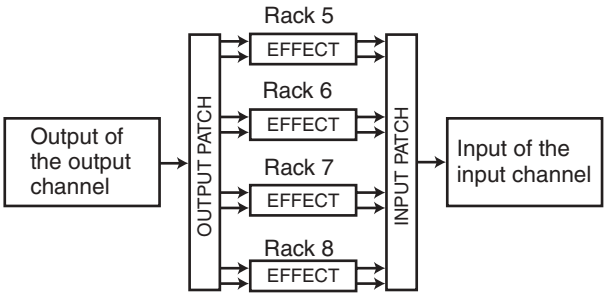
# About the internal effects

The M7CL's internal effects can be mounted in racks 5–8, and patched to an output channel's output or input channel's input, or inserted into a channel. For each effect mounted in a rack, you can choose one of 54 types of effect. With the default settings, the signals from MIX channels 13–16 are input to racks 5–8, and from the racks are then output to ST IN 1–4 (L/R).

NOTE

- *The internal effects cannot be mounted in racks 1–4.*
- *Some effect types can be mounted only in rack 5 or 7.*

To use an internal effect via send/return, assign the output of a MIX channel etc. to the input of the effect, and assign the output of the effect to an input channel.
In this case, the corresponding output channel is used as a master channel for the effect send, and the input channel is used as an effect return channel.




Alternatively, you can assign the input and output of the internal effect to the insert-out/in of a desired channel (except for a ST IN channel), so that the effect is inserted into that channel.

*Except for a ST IN channel

The internal effects fall into two categories; "STEREO type" (2-in/2-out) effects that process the L/R channel input signals independently, and "MIX type" (1-in/2-out) effects that mix the two channels before processing them. If signals are assigned to both the L and R inputs of an effect, the way in which the L/R channels are processed will depend on whether a Stereo effect type or a Mix effect type is selected, as follows.

## ● STEREO type effects

## ● MIX type effects

If a signal is assigned to only one input of a two-input effect, it will be processed as mono-in/stereo-out regardless of whether a Stereo effect type or Mix effect type is selected.

# Using an internal effect via send/return

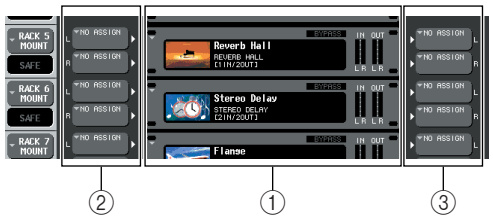
Here we will explain how to use a MIX bus as an effect send bus and a ST IN channel as an effect return channel, so that the effect can be used in a send/return configuration.

HINT

- *If you want to use a MIX bus as an effect send bus, select "VARI" as the bus type. This will allow you to adjust the send level separately for each input channel.*
- *If you want to use the input to an effect in stereo, it is convenient to assign the send-source MIX bus to stereo. (For details on bus assignments → p. 234).*

## 1 As described in "Virtual rack operations" (→ p. 172) steps 1–3, mount an effect in a rack.

The rack in which an effect is mounted will indicate the effect type used by that effect, the number of inputs and outputs, and the levels before and following the effect.




① **Racks**
② **INPUT button**
③ **OUTPUT button**

## 2 Press the INPUT L button to open the OUTPUT CH SELECT popup window, and select a MIX channel as the input source for the rack.

For details on the OUTPUT CH SELECT popup window, refer to step 5 of "Virtual rack operations" (→ p. 172). The output of the MIX channel you're using as the effect send is now assigned to the L input of the effect.

If you're using a stereo source, assign the L/R signals of the stereo MIX channels to the L/R inputs of the rack.

## 3 Press the OUTPUT L button to open the INPUT CH SELECT popup window, and select the L input of the desired ST IN channel as the output-destination for the rack.

For details on the INPUT CH SELECT popup window, refer to step 6 of "Virtual rack operations" (→ p. 172). The L input of the ST IN channel used as the effect return channel is now assigned to the L output of the effect.

If you're using the output of the effect in stereo, assign the R input of the same ST IN channel to the R output of the rack in the same way.

HINT

- *You can select more than one output destination for the effect.*

## 4 Press the rack in which you mounted the effect.

The EFFECT popup window will appear, allowing you to edit the parameters of the effect.

### ① INPUT L/R buttons

These buttons display the OUTPUT CH SELECT popup window. The operating procedure is the same as for the INPUT button in the GEQ/EFFECT field.

### ② OUTPUT L/R buttons

These buttons display the INPUT CH SELECT popup window. The operating procedure is the same as for the OUTPUT button in the GEQ/EFFECT field.

### ③ Input/output meters

These indicate the level of the signals before and after the effect.

### ④ MIX BAL. knob

This knob adjusts the balance between the original sound and effect sound included in the output signal from the effect. If you press this knob to select it, you'll be able to adjust it using the corresponding multifunction encoder.

## 5 As necessary, use the multifunction encoder to adjust the MIX BAL. knob.

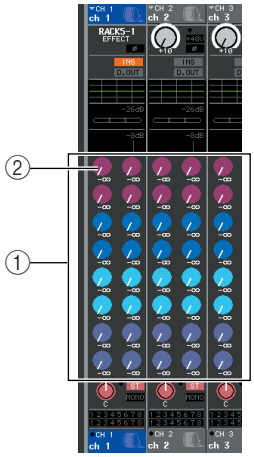
The MIX BAL. knob adjusts the balance between the original sound and effect sound included in the output signal from the effect. This parameter is provided for all effect types.

If you're using the effect via send/return, set this to 100% (effect sound only).

HINT

- *For details on editing the effect parameters, refer to Editing the internal effect parameters (P. 184).*

**6 To adjust the effect send level of an input channel, use the navigation keys to access the OVERVIEW screen that includes the input channel you want to control.**




① **TO MIX/TO MATRIX field**

② **TO MIX SEND LEVEL knob**

**7 Make sure that a MIX bus is selected as the send-destination of the TO MIX/TO MATRIX field.**

If a MATRIX bus is selected as the send-destination (the field indicates "TO MATRIX"), use the SELECTED CHANNEL VIEW screen's TO MIX/TO MATRIX button to switch to a MIX bus (→ p. 175).

**8 Press the TO MIX SEND LEVEL knob that corresponds to the desired MIX bus, and turn the multifunction encoder to adjust the send level of the signal sent from each channel to the MIX bus.**

In this state you can adjust the send level of the signal sent from the input channel to the internal effect. Adjust the send level of other input channels in the same way.

If you press the selected knob once again, the MIX SEND popup window (8 ch) for the send-destination MIX bus will appear. This popup window contains on/off switches for the signals sent from each channel to the corresponding bus, and lets you select the send point (PRE or POST) (→ p. 70).

NOTE

- *At this time, you must be sure that the send level from the ST IN channel you selected in step 3 to the corresponding MIX bus is set to 0. If you raise this send level, the output of the effect will be returned to the input of the same effect, possibly causing oscillation.*

**9 To adjust the master level of the effect send, call up the MIX channel you specified as the input-source of the rack in step 2 to the Centralogic section, and adjust the corresponding fader.**

Set the level as high as possible without allowing the post-effect signal to reach the overload point.

HINT

- *The input/output levels of the effect are shown by the input/output meters at the upper right of the EFFECT popup window.*

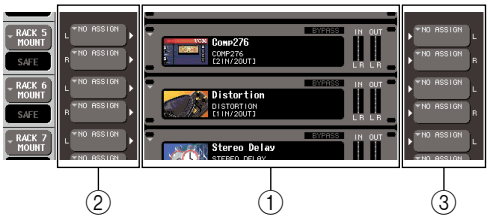
**10 To adjust the effect return level, operate the ST IN channel you selected as the output-destination for the rack in step 3.**

## Inserting an internal effect into a channel

Here we will explain how to insert an effect into a channel by assigning the input/output of the internal effect to the input/output of the desired channel (except for a ST IN channel).

**1 As described in "Virtual rack operations" (→ p. 172) steps 1–3, mount an effect in a rack.**

The rack in which an effect is mounted will indicate the effect type used by that effect, the number of inputs and outputs, and the levels before and following the effect.




① **Racks**
② **INPUT buttons**
③ **OUTPUT buttons**

**2 Press the INPUT L button to open the OUTPUT CH SELECT popup window, and select the insert-out of a channel as the input-source.**

For details on the OUTPUT CH SELECT popup window, refer to step 5 of "Virtual rack operations" (→ p. 172). Insert-out is now assigned to the L input of the effect.

**3 Press the INPUT L button to open the INPUT CH SELECT popup window, and select the insert-in of the same channel as the output-destination.**

For details on the INPUT CH SELECT popup window, refer to step 6 of "Virtual rack operations" (→ p. 172). Insert-in is now assigned to the L output of the effect.

If you are inserting in a channel that handles a stereo source, assign the R channel insert-out/insert-in to the R input/output.

**4 Use the navigation keys to access the OVERVIEW screen for the channel in which you want to insert the effect.**

**5 Press the INSERT/DIRECT OUT field to access the INSERT/DIRECT OUT popup window.**

Make sure that the rack you inserted in the input/output ports is selected. For details on Insert Out/In, refer to "Inserting an external device into a channel" (→ p. 110).

HINT

*• The INSERT/DIRECT OUT popup window also lets you change the insert-out/in position within the channel.*

**6 Make sure that the INSERT ON/OFF button is turned on for the channel into which you inserted the effect.**

If it is off, press the button to turn it on. In this state, effect insertion is enabled for the corresponding channel.

**7 In the function access area, press the RACK button to access the VIRTUAL RACK window, and use the GEQ/EFFECT tab to display the GEQ/EFFECT field.**

**8 Press the effect rack that you want to insert into the channel; the EFFECT popup window will appear.**

In this popup window you can edit the parameters of the effect. The popup window contains the following items.

### ① INPUT L/R buttons

These buttons display the OUTPUT CH SELECT popup window. The operating procedure is the same as for the INPUT button in the GEQ/EFFECT field.

### ② OUTPUT L/R buttons

These buttons display the INPUT CH SELECT popup window. The operating procedure is the same as for the OUTPUT button in the GEQ/EFFECT field.

### ③ Input/output meters

These indicate the level of the signals before and after the effect.

## 9 Select the effect type and edit the effect parameters.

For details on editing the effect parameters, refer to "Editing the internal effect parameters" that follows.

HINT

- *The levels before and after the effect are shown by the input/output meters at the upper right of the EFFECT popup window.*

NOTE

- *Adjust the effect send master level and the effect parameters so that the signal does not reach the overload point at the input or output stage of the effect.*

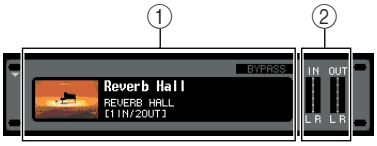
## 10 Using the fader of the channel you selected as the rack's output destination in step 3, adjust the level as appropriate.

# Editing the internal effect parameters

This section explains how to change the effect type and edit the parameters.

## 1 As described in "Virtual rack operations" (→ p. 172) steps 1–3, mount an effect in a rack.

A rack in which an effect is mounted will show the following information.




### ① Effect title/type

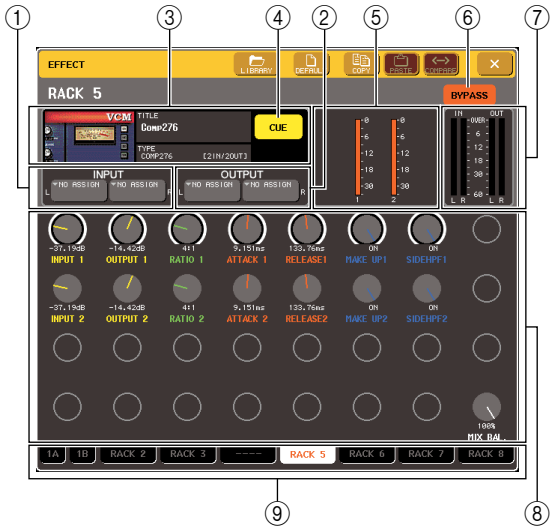
This shows the effect title, the name of the type that is used, and a graphic. The number of input/output channels (1 IN/2 OUT or 2 IN/2 OUT) of this effect is also shown.

### ② Input/output meters

These indicate the level of the signals before and after the effect.

## 2 Press the rack in which the effect you want to edit is mounted.

The EFFECT popup window will appear, allowing you to edit the parameters of the effect. In the EFFECT popup window you can use the tabs to select from four racks (RACK5 – RACK8).




### ① INPUT L/R buttons

These buttons display the OUTPUT CH SELECT popup window.

### ② OUTPUT L/R buttons

These buttons display the INPUT CH SELECT popup window.

### ③ Effect type field
This shows the effect title, the name of the type that is used, and a graphic. The number of input/output channels (1 IN/2 OUT or 2 IN/2 OUT) of this effect is also shown. When you press this field, the EFFECT TYPE popup window will appear, allowing you to select the effect type.

### ④ EFFECT CUE button
This button cue-monitors the output of the currently displayed effect. This cue function is valid only while this screen is displayed. The cue will be cancelled automatically when you switch to a different screen.

### ⑤ Special parameter field
This shows special parameters that are specific to some effect types.

### ⑥ BYPASS button
This button temporarily bypasses the effect.

### ⑦ Input/output meters
These indicate the level of the signals before and after the effect.

### ⑧ Effect parameter field
This area shows parameters for the currently selected effect type. When you press a knob in this field, you'll be able to use the multifunction encoders to control the corresponding horizontal row of knobs.

### ⑨ Rack select tabs
These tabs switch between racks 1–8.

## 3 To change the effect type, press the effect type field to open the EFFECT TYPE popup window.
Press a new effect type to select it.

HINT

- *You can also switch the effect type by recalling a library.*

NOTE

- *Effect types "HQ.PITCH" and "FREEZE" can be used only in rack 5 or 7. Also, even if you copy these two effect types, you will not be able to paste them to rack 6 or 8.*

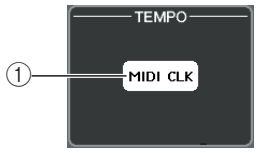
## 4 To edit the effect parameters, press a knob in the effect parameter field to select it, and turn the corresponding multifunction encoder.

HINT

- *For details on the parameters of each effect type, refer to the supplementary material at the end of this manual (→ p. 253).*

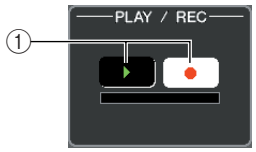
## 5 Edit the settings in the special parameter field as necessary.
For some effect types, parameters such as the following will appear in the special parameter field.

### ● TEMPO
This is shown if a tempo-type or modulation-type effect is selected.



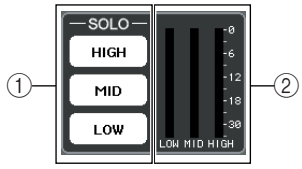

#### ① MIDI CLK button
If you turn this button on, the BPM parameter of that effect will be set to match the tempo of the MIDI timing clock being input from the MIDI port.

### ● PLAY/REC
This is shown if FREEZE is selected as the effect type.




#### ① PLAY button / REC button
These buttons are used to record (sample) and play back when using the freeze effect. For details on how to use this, refer to "Using the Freeze effect" (→ p. 188).

### ● SOLO
This is shown if M.BAND DYNA. or M.BAND COMP. is selected as the effect type.

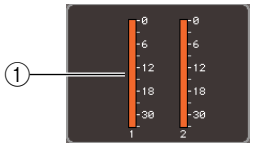



#### ① HIGH/MID/LOW buttons
These buttons pass only the selected frequency band (multiple selections are allowed).

#### ② Gain reduction meters
These show the amount of gain reduction for each band.

## ● GAIN REDUCTION METERS

These meters appear if Comp276/S or Comp260/S is selected as the effect type.

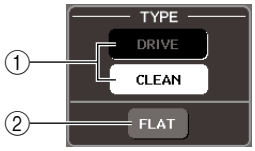



### ① Gain reduction meters

The meters indicate the amount of gain reduction applied by the compressor.

## ● TYPE

This field is displayed when Equalizer601 is selected as the effect type.




### ① TYPE button

Select one of two equalizer types that feature different effects.

DRIVE emulates changes in frequency response of analog circuits, creating a driven sound that enhances analog characteristics by adding some distortion.

CLEAN emulates changes in frequency response of analog circuits, creating a clear non-distorted sound that is inherently digital.

### ② FLAT button

This button resets the gain of all bands to 0dB.

**6 If you want to monitor the output signal of the currently displayed effect, press the EFFECT CUE button to turn it on.**

HINT

- *Even if the Cue mode is set to MIX CUE mode (in which all channels whose [CUE] keys are on will be mixed for monitoring), only the output signal of the effect will be monitored when you turn on the EFFECT CUE button. (The [CUE] keys that had been turned on until then will be temporarily defeated.)*

**7 If you want to bypass the currently displayed effect, press the BYPASS button to turn it on.**

**8 If you want to copy the currently-displayed effect settings to the effect of another rack, or to initialize the settings, you can do so using the tool buttons at the top of the popup window.**

For details on how to use these buttons, refer to "Using the tool buttons" (→ p. 35).

HINT

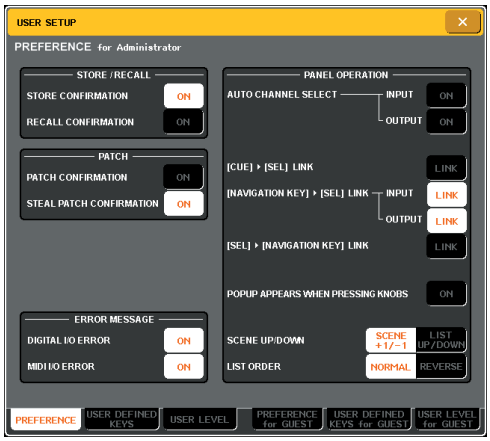
- *Effect settings can be stored and recalled at any time using the effect library (→ p. 35).*

# Using the Tap Tempo function

"Tap tempo" is a function that lets you specify the delay time of a delay effect or the modulation speed of a modulation effect by striking a key at the desired interval. To use the Tap function, you must first assign Tap Tempo to a user-defined key, and then operate that user-defined key.

**1 In the function access area, press the SETUP button to access the SETUP screen.**

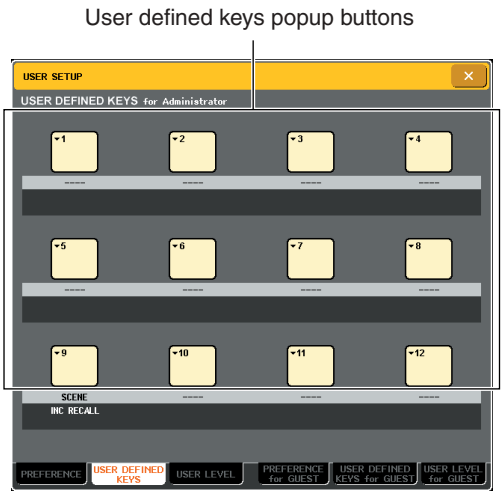
**2 In the upper left of the screen, press the USER SETUP button to access the USER SETUP popup window.**




This window includes several pages, which you can switch between using the tabs located at the bottom of the window.

**3 Press the USER DEFINED KEYS tab to select the USER DEFINED KEYS page.**

The USER DEFINED KEYS page lets you assign functions to user defined keys [1]–[12].

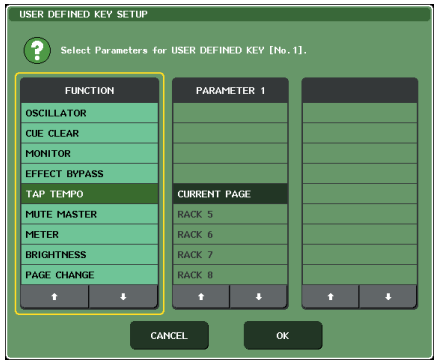



### 4 Press the popup button for the user-defined key to which you want to assign the Tap Tempo function.

The USER DEFINED KEY SETUP popup window will appear.

### 5 Select "TAP TEMPO" in the FUNCTION column, select "CURRENT PAGE" in the PARAMETER 1 column, and press the OK button.

Use the ↑/↓ buttons to select an item in each column. Press the OK button; the Tap Tempo function will be assigned to the user-defined key you selected in step 4, and you will return to the USER DEFINED KEY SETUP page.




HINT

- *If you specify "CURRENT PAGE" in the PARAMETER 1 column, the Tap Tempo function can be used for the currently-shown effect (rack).*
- *If you specify "RACK x" (x=5–8) in the PARAMETER 1 column, the Tap Tempo function can be used only for a specific effect (rack).*
- *For more about user-defined keys, refer to "User-defined keys" (→ p. 216).*

### 6 In the function access area, press the RACK button to access the VIRTUAL RACK window, and press the GEQ/EFFECT tab to display the GEQ/EFFECT field.

### 7 Press the rack in which the effect you want to control is mounted.

The GEQ/EFFECT popup window will appear.

### 8 Press the effect type field to open the EFFECT TYPE popup window, and select an effect type that includes the BPM parameter.

The BPM parameter is included in delay-type and modulation-type effects, and can be used to specify the delay time or modulation speed.

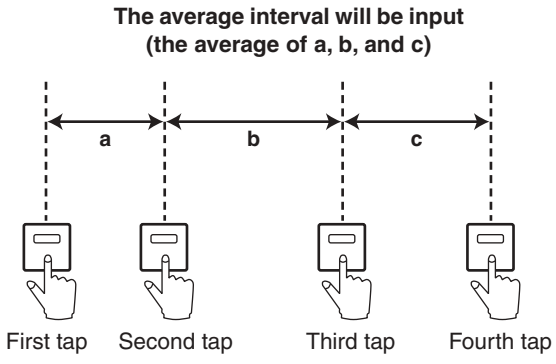
HINT

- *For details on the parameters of each effect type, refer to the supplementary material at the end of this manual (→ p. 253).*

### 9 Set the SYNC parameter to ON.

### 10 At the desired tempo, repeatedly press the user-defined key to which you assigned the Tap Tempo function.

The average interval (BPM) at which you press the key will be calculated, and that value will be reflected by the BPM parameter.




HINT

- *If the average value is outside the range of 20–300 BPM, it will be ignored.*
- *If you turn on the MIDI CLK button in the special parameter field, the BPM parameter value will change according to the tempo of the MIDI timing clock received from the MIDI port.*

## Using the Freeze effect

Here's how to use the "FREEZE" effect type, which provides the functionality of a simple sampler. When this effect type is selected, you can perform operations in the screen to record (sample) and play back a sound.

### 1 In the function access area, press the RACK button to access the VIRTUAL RACK window, and press the GEQ/EFFECT tab to display the GEQ/EFFECT field.

### 2 Mount an effect in rack 5 or rack 7.

NOTE

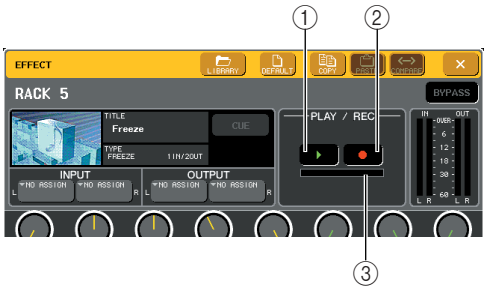
- *Effect types "FREEZE" and "HQ.PITCH" can be used only in rack 5 or 7.*

### 3 Press the rack in which the effect you want to control is mounted.

The GEQ/EFFECT popup window will appear.

### 4 Press the effect type field to open the EFFECT TYPE popup window, and select "FREEZE."

If the "FREEZE" effect type is selected, a PLAY button, REC button, and progress bar are shown in the special parameter field.




① **PLAY button**
② **REC button**
③ **Progress bar**

HINT

- *As an alternative to switching the effect type, you can also recall settings that use the "FREEZE" effect type from the effect library.*

### 5 To begin recording (sampling), press the REC button and then press the PLAY button.

The signal being input to the effect will be recorded. The progress bar shows the current recording location. When a fixed time has elapsed, the buttons will automatically turn off.

HINT

- *You can adjust the parameters in the window to make detailed settings for recording time, the way in which recording will begin, and the way in which the sample will play back. For details on the parameters, refer to the supplementary material at the end of this manual (→ p. 262).*

### 6 To play back the recorded sample, press the PLAY button.

NOTE

- *The sampled content will be erased if you record another sample, change the effect, or turn off the power to the M7CL.*

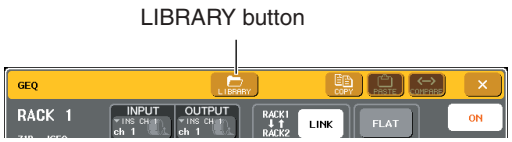
# Using the graphic EQ and effect libraries

You can use dedicated libraries to store and recall graphic EQ and effect settings.

## ● GEQ library

Use the "GEQ library" to store and recall GEQ settings. All GEQ units used in the M7CL can reference this GEQ library. (However, the 31BandGEQ and Flex15GEQ are different types. You cannot recall a GEQ library item of a different type.)
200 items can be recalled from the library. Number 000 is read-only data for initialization, and the remaining library numbers can be freely read or written.

To recall an item from the GEQ library, press the LIBRARY button located in the upper part of the window when the GEQ popup window is shown.




For details on using the library, refer to "Using libraries" (→ p. 35).

NOTE

- *Store/recall operations are performed on individual racks. It is not possible to store or recall the two Flex15GEQ units individually.*

HINT

- *To access the GEQ/EFFECT popup window, press the rack in the GEQ/EFFECT field.*

## ● Effect library

Use the "Effect library" to store and recall effect settings. 199 items can be recalled from the effect library. Library items 1–54 are read-only presets, and correspond to effect types 1–54 respectively. Library items 55–57 are reserved for use by the system. Other library item numbers can be freely read and written.

To recall an item from the effect library, press the LIBRARY button located in the upper part of the window when the EFFECT popup window is shown.

For details on using the library, refer to "Using libraries" (→ p. 35).

NOTE

- *Library items using the "HQ.PITCH" or "FREEZE" effect types can be recalled only into rack 5 or 7. They cannot be recalled into rack 6 or 8.*

HINT

- *You can also use MIDI messages (program changes) to recall effect settings from the library (→ p. 200).*

# Using an external head amp

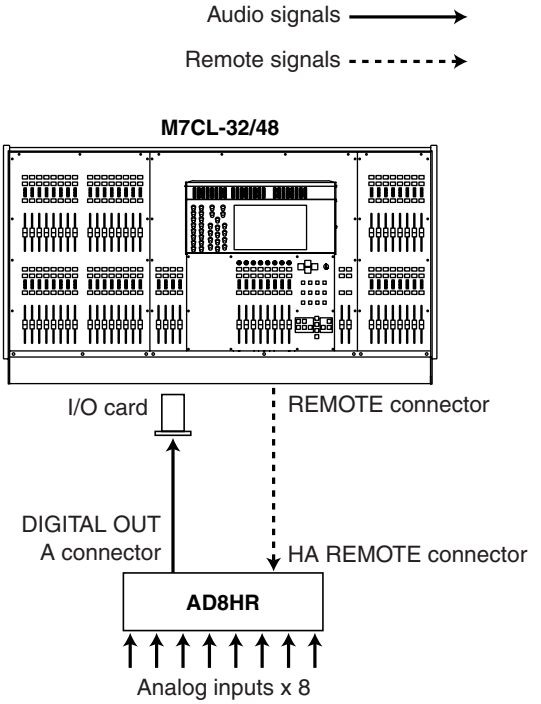
If you connect an external head amp that supports remote control via a dedicated protocol (e.g, Yamaha AD8HR, SB168-ES) to the REMOTE connector of the M7CL-32/48 or the EtherSound connector of the M7CL-48ES. You will be able to remotely control parameters such as the phantom power (+48V), gain, and HPF of each channel from the M7CL.
For information on connecting the M7CL48-ES to SB168-ES units, please refer to the "Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function" section in Chapter 4. (→ p. 43)

NOTE

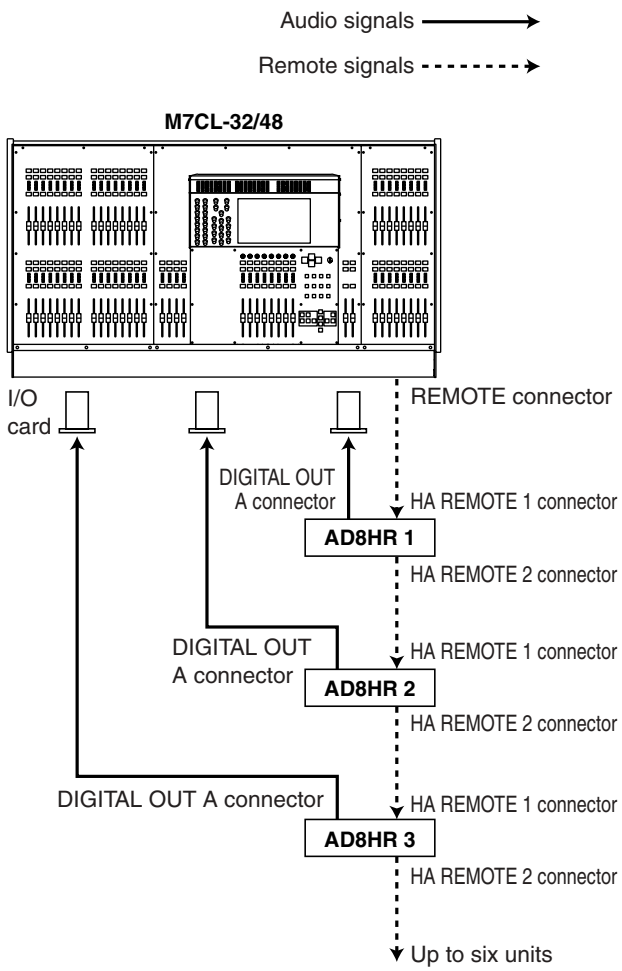
- *Connecting the M7CL-48ES and DME8i-ES/4io-ES via the EtherSound connectors enables you to remotely control the DME8i-ES/4io-ES's head amp. For more information on the settings, please refer to the DME8i-ES/8o-ES/4io-ES Owner's Manual and AVS-ESMonitor Owner's Manual.*

## Connecting the M7CL-32/48 to the AD8HR

To remotely control the AD8HR from the M7CL-32/48, use an RS422 D-sub9 pin cable to connect the REMOTE connector located on the M7CL-32/48's rear panel to the AD8HR's HA REMOTE 1 connector. This connection allows the M7CL-32/48 to remotely control the AD8HR. So that the signals input to the AD8HR will be sent to the M7CL-32/48, use a D-sub25 pin AES/EBU cable to connect the AD8HR's DIGITAL OUT A (or B) to an I/O card installed in a slot of the M7CL-32/48.

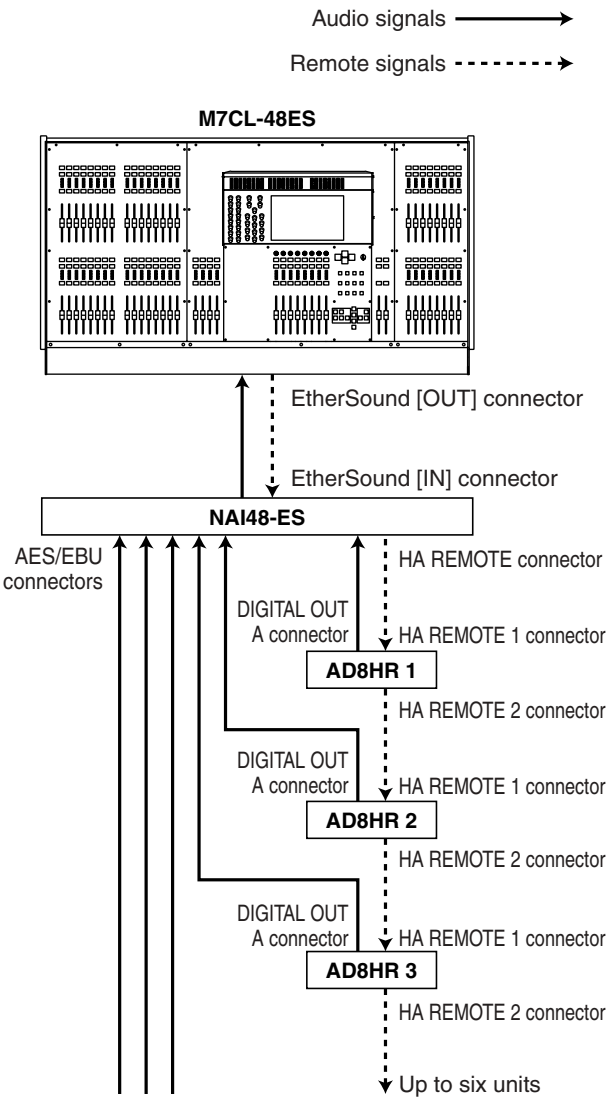



Alternatively, you can use a "daisy chain" connection to remotely control multiple AD8HR units simultaneously. To do this, connect the AD8HR's HA REMOTE 2 connector to the second AD8HR's HA REMOTE 1 connector. If you use three Yamaha MY16-AE units, you can connect up to six AD8HR units.



## Connecting the M7CL-48ES to the AD8HR

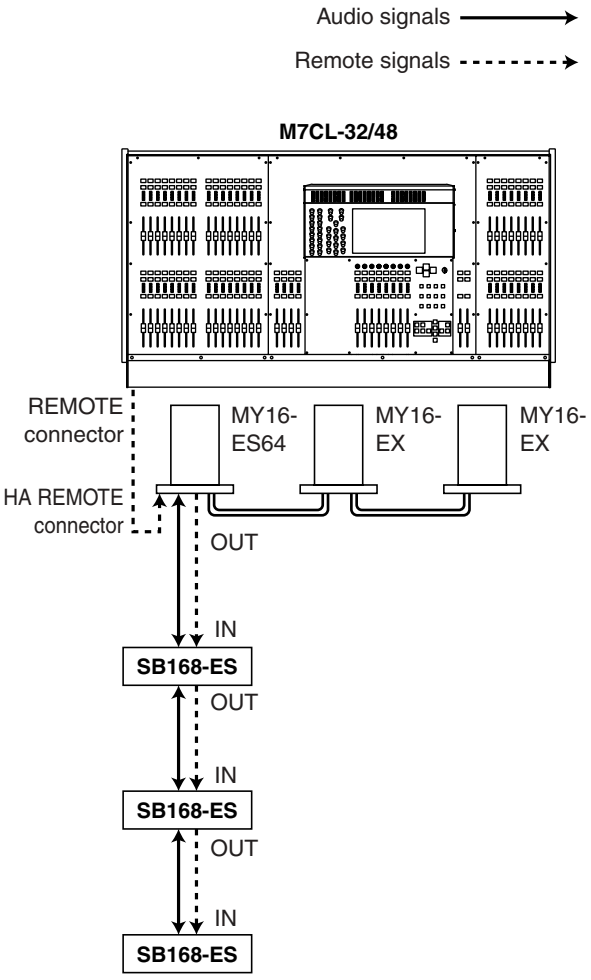
To remotely control the AD8HR from the M7CL-48ES, use an Ethernet cable to connect the EtherSound [OUT] connector located on the M7CL-48ES's rear panel to the NAI48-ES's EtherSound [IN] connector, then use an RS422 D-sub9 pin cable to connect the NAI48-ES's HA REMOTE connector to the AD8HR's HA REMOTE 1 connector. This connection enables you to remotely control the AD8HR from the M7CL-48ES. To enable signals input to the AD8HR to be sent to the M7CL-48ES, use a D-sub25 pin AES/EBU cable to connect the AD8HR's DIGITAL OUT A (or B) to the NAI48-ES's AES/EBU connector. The signals from the NAI48-ES to the M7CL-48ES are sent via EtherSound connection.
Alternatively, you can use a "daisy chain" connection to remotely control multiple AD8HR units simultaneously. To do this, connect the AD8HR's HA REMOTE 2 connector to the second AD8HR's HA REMOTE 1 connector. If you use the NAI48-ES, you can connect up to six AD8HR units.



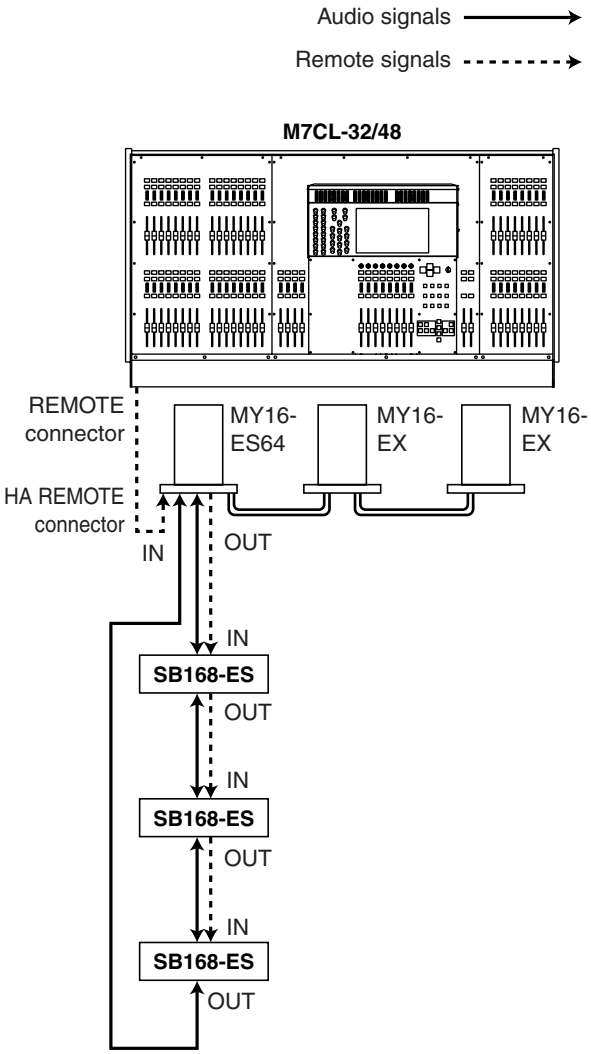
# Connecting the M7CL-32/48 to the SB168-ES

To remotely control the SB168-ES from the M7CL-32/48, install an MY16-ES64 EtherSound card in a slot on the M7CL-32/48, then use an Ethernet cable to connect the M7CL-32/48 to the SB168-ES. And then, use a D-sub 9-pin cross cable to connect the REMOTE connector located on the rear panel of the M7CL-32/48 to the MY16-ES64's HA REMOTE connector. This connection enables you to remotely control the SB168-ES from the M7CL-32/48. Alternatively, you can use a daisy chain or ring connection and install two MY16-EX expansion cards in the slots on the M7CL-32/48 to remotely control up to three SB168-ES units simultaneously.

## ● Daisy chain connection




## ● Ring connection




NOTE

- *Please refer to the SB168-ES Owner's Manual for information on setting up the MY16-ES64/MY16-EX cards and EtherSound network.*

# Remotely controlling an external head amp

Here's how an external head amp (subsequently referred to as the "external HA") connected to the REMOTE connector or EtherSound connector can be remotely controlled from the M7CL.

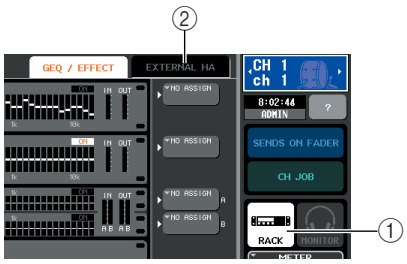
NOTE

*• To set up an external HA, you will use the EXTERNAL HA popup window on the M7CL-32/48, and the SB168-ES HA and EXT-ES HA popup windows on the M7CL-48ES. In this section, these popup windows are collectively referred to as the "EXTERNAL HA popup window."*

## 1 Connect the M7CL and external HA.

Refer to "Using an external head amp" (→ p. 190) or the owner's manual for your external HA.

## 2 In the function access area, press the RACK button to access the VIRTUAL RACK window.

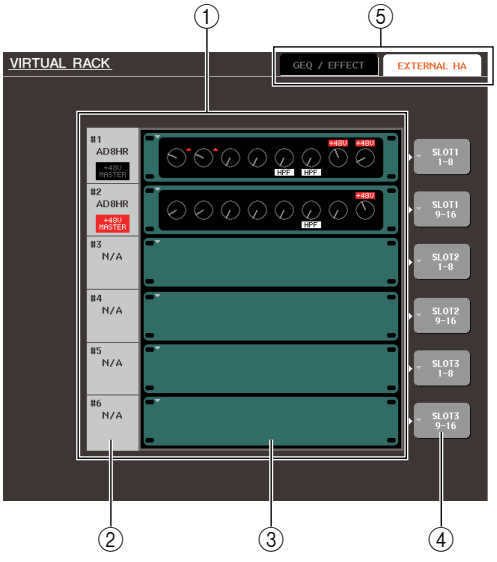



① **RACK button**

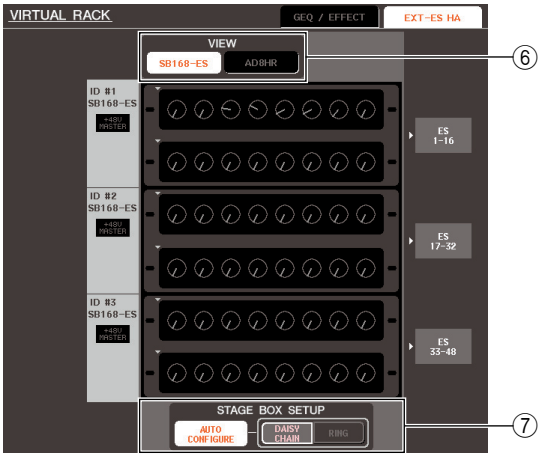
② **EXTERNAL HA tab / EXT-ES HA tab**

## 3 In the upper part of the VIRTUAL RACK window, press the EXTERNAL HA tab (EXT-ES HA tab) to display the EXTERNAL HA field (EXT-ES HA field.)

The EXTERNAL HA field (EXT-ES HA field) includes the following items.




M7CL-32/48




M7CL-48ES

### ① EXTERNAL HA field / EXT-ES HA field

This field shows the state of the connected external HA.

### ② ID / Model name / +48V master

This displays information for the external HA mounted in the rack. The ID number is automatically assigned in order of the devices connected to the REMOTE connector or EtherSound connector, from 1 to six. This area also shows the on/off status of the master phantom power.

### ③ Virtual racks

These are six racks in which remotely controllable external HA units can be mounted. If an external HA is mounted, its settings (GAIN setting, phantom power, and HPF on/off) are shown. When you press a rack, the EXTERNAL HA popup window for that rack will appear.

### ④ EXTERNAL HA PORT SELECT popup button (M7CL-32/48)

This button accesses the EXTERNAL HA PORT SELECT popup window, where you can specify the input ports to which the external HA mounted in the rack will be connected.

### ⑤ Field select tabs

Use these tabs to switch the field shown in the VIRTUAL RACK window. For details on the GEQ/EFFECT fields, refer to "Virtual rack operations" (→ p. 172).

### ⑥ VIEW switch buttons (M7CL-48ES)

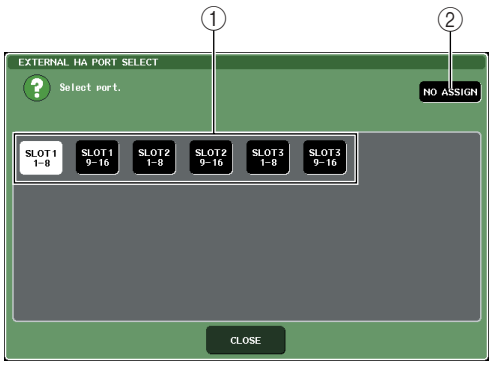
Use these buttons to select the virtual rack display for SB168-ES or for others (AD8HR). If only the SB168-ES is connected, select the virtual rack display for SB168-ES.

### ⑦ STAGE BOX SETUP (M7CL-48ES)

When the SB168-ES is connected, you can turn on or off the automatic setup of EtherSound input/output patches and word clock on the M7CL-48ES. You can also change some settings depending on the connection type. For more information, please refer to "Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function" (→ p. 43).

## 4 If you are using the M7CL-32/48, in order to specify the input ports for an external HA, press the EXTERNAL HA PORT SELECT popup button for that rack.

The EXTERNAL HA PORT SELECT popup window will appear. The popup window includes the following items.




### ① PORT SELECT buttons

These buttons specify the input ports to which the external HA is connected.

### ② NO ASSIGN button

This button defeats the port selection.

NOTE

- *The input ports are fixed on the M7CL-48ES.*

## 5 If you are using the M7CL-32/48, use the PORT SELECT buttons to specify the input ports to which the audio output of the external HA is connected.

When you've finished making settings, press the CLOSE button to close the popup window.

NOTE

- *If an external HA is connected to one of the M7CL-32/48's slots, you must specify the appropriate input port manually. If this is set incorrectly, the external HA will not be detected correctly when you patch input ports to input channels.*

## 6 To remotely control an external HA, press the rack in which the external HA you want to control is mounted.

The EXTERNAL HA popup window will appear. Here you can remotely control the external HA by using the knobs and buttons in the M7CL's display or the encoders of the top panel.

### ① +48V MASTER

If an external HA is connected to the REMOTE connector, the on/off status of the master phantom power is shown here. (Switching this on/off is performed on the external HA itself.)

### ② +48V buttons

These switch phantom power on/off for each channel.

### ③ GAIN knobs

These indicate the gain of the external HA. To adjust the value, press the knob to select it, and use multifunction encoders 1–8. The level meter located at the immediate right of the knob indicates the input level for the corresponding port.

### ④ FREQUENCY knobs / HPF buttons

These controls switch the external HA's built-in high-pass filter on/off, and adjust its cutoff frequency. If you press the FREQUENCY knob to select it, you'll be able to adjust it using the corresponding multifunction encoder.

### ⑤ Rack select tabs

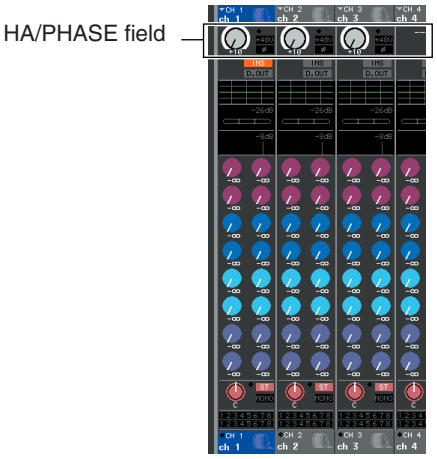
These tabs switch the rack that is displayed in the EXTERNAL HA popup window.

HINT

- *If you newly connect an AD8HR, the setting for this AD8HR will be used.*
  *These knobs and buttons are shown in the EXTERNAL HA popup window even if an AD8HR is not connected, allowing you to create and store a scene even while the AD8HR is not connected.*
- *If SB168-ES units are connected to the M7CL-32/48, the display will indicate as if two AD8HRs (e.g., AD8HR #1 and AD8HR #2) per SB168-ES were connected to the M7CL-32/48, and you can control the SB168-ES units in the same way as the AD8HRs.*
  *However, the following parameters are not supported. Even if these parameters are displayed, you will be unable to set values.*

  *Device Mode/Name, Word Clock Source, Gain Trim, Panel Lock, LED Brightness*
- *Error messages related to the SB168-ES will not be displayed. In addition, you will be unable to set the EtherSound parameters. Use the AVS-ESMonitor software application for these functions.*

**7 To remotely control the external HA from an input channel of the M7CL, use the navigation keys to access the OVERVIEW screen that includes the channel whose HA you want to control.**




**8 Press the HA/PHASE field of the channel whose external HA you want to adjust; the HA/PATCH popup window will appear.**

**9 Press the input port popup button, and select the input port assigned to the external HA.**

With these settings, the external HA can be used in the same way as the M7CL's own HA. For details on the HA/PATCH popup window, refer to "Making HA (Head Amp) settings" (→ p. 61).

HINT

- *External HA settings are saved as part of the scene. However, the phantom master setting is an exception to this.*
- *When you adjust the brightness of the M7CL's panel LEDs, this will also affect the LEDs of the external HA.*

NOTE

- *If you cannot control an external head amp (connected to one of SLOTs 1–3) because, for example, the head amp is not turned on, the GAIN value will not be displayed in the input channel section.*

# ◆ Chapter 17 ◆
# MIDI

This chapter explains how MIDI messages can be transmitted from an external device to control the M7CL's parameters, and conversely how operations on the M7CL can be transmitted as MIDI messages.

## MIDI functionality on the M7CL

The M7CL can use MIDI to perform the following operations.

### ● Program Change transmission and reception

When you execute a specific event (scene/effect library recall) on the M7CL, a program change message of the corresponding number can be transmitted to an external device. Conversely, the corresponding event can be executed when a program change message is received from an external device.

### ● Control Change transmission and reception

When you execute a specific event (fader/encoder or key operation) on the M7CL, the corresponding control change message can be transmitted to an external device. Conversely, events can be executed when control change messages are received from an external device. This allows you to record fader and key operations on a MIDI sequencer or other external device, and play them back later.

### ● Parameter change (SysEx) transmission and reception

When specific events (fader/encoder or key operations, changes in system settings or user settings) are executed, "parameter change" system exclusive messages can be transmitted to an external device. Conversely, events can be executed when parameter changes are received from an external device.
Using this capability, M7CL operations can be recorded and played back on a MIDI sequencer or other external device, or changes in system settings and user settings can be reflected on another M7CL console.

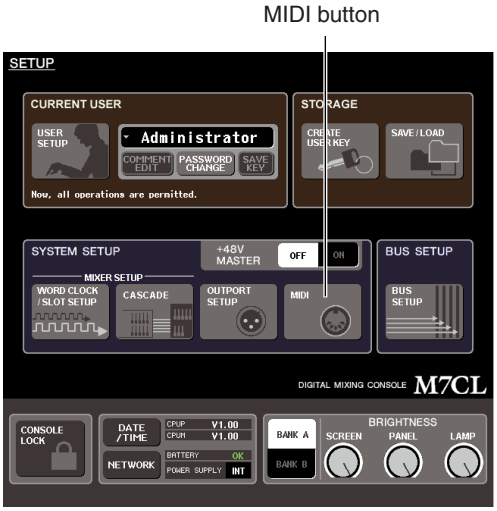
NOTE

- *The port used for transmission and reception of MIDI messages can be selected from the rear panel MIDI IN/OUT connectors, the rear panel REMOTE connector, or an I/O card installed in a slot 1–3. All of the above functionality will be common to the selected port.*

# Basic MIDI settings

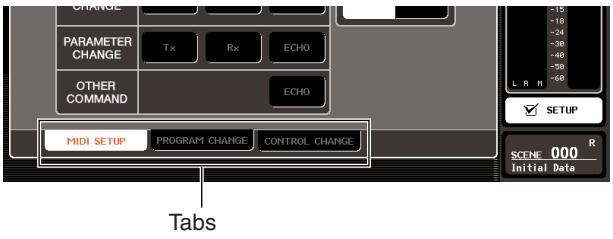
Here's how to select the type of MIDI messages the M7CL will transmit and receive, the MIDI port that will be used, and the MIDI channel.

## 1 In the function access area, press the SETUP button to access the SETUP screen.



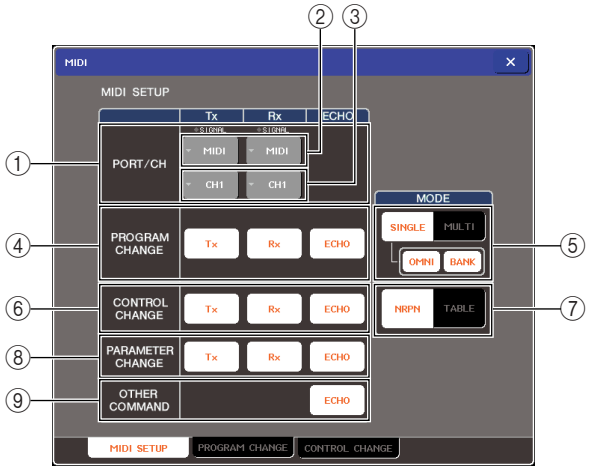

## 2 In the center of the screen, press the MIDI button to access the MIDI popup window.

This window includes several pages, which you can switch between using the tabs located at the bottom of the window.




## 3 Press the MIDI SETUP tab to access the MIDI SETUP page.

In the MIDI SETUP page you can select the type of MIDI messages that will be transmitted and received, and choose the port that will be used. This page includes the following items.




### ① PORT/CH field

Here you can select the port and MIDI channel that will be used to transmit and receive MIDI messages. If MIDI messages are being transmitted or received, the SIGNAL indicators at the top of this area will light.

### ② Port select popup button

Opens the MIDI SETUP popup window, where you can select the MIDI message transmission (Tx) and reception (Rx) ports.

### ③ Channel select popup button

Opens the MIDI SETUP popup window, where you can select the MIDI message transmission (Tx) and reception (Rx) channels.

### ④ PROGRAM CHANGE field

Here you can make settings for program change transmission and reception.

- **Tx button** ..... Switches program change transmission on/off.
- **Rx button**..... Switches program change reception on/off.
- **ECHO button**
  ..... This selects whether incoming program changes are echoed-out from the MIDI transmission port.

HINT

*• For details on how to assign the scene or effect for each program number, refer to "Using program changes to recall scenes and library items" (→ p. 200).*

### ⑤ PROGRAM CHANGE MODE field

Here you can select the program change transmit/receive mode.

- **SINGLE button**
  ..... If this button is on, program changes will be transmitted and received on a single MIDI channel.
- **OMNI button**.. If this button is on, program changes of all MIDI channels will be received in Single mode. (Multi mode transmission/reception and Single mode transmission are disabled.)
- **BANK button**
  ..... If this button is on, bank select messages can be transmitted and received in Single mode. (This is disabled for Multi mode transmission/reception.)
- **MULTI button**
  ..... If this button is on, program changes will be transmitted/received on multiple MIDI channels (Multi mode).

### ⑥ CONTROL CHANGE field

Here you can make settings for control change transmission/reception.

- **Tx button**.....Switches control change transmission on/off.
- **Rx button** .....Switches control change reception on/off.
- **ECHO button**
  .....Selects whether incoming control changes will be echoed out from the MIDI transmit port.

### ⑦ CONTROL CHANGE MODE field

Here you can select the control change transmission/reception mode.

- **NRPN button**
  .....If this button is on, the M7CL's mix parameters will be transmitted/received as NRPN messages on one MIDI channel (NRPN mode).
- **TABLE button**
  .....If this button is on, the M7CL's mix parameters will be transmitted/received as control change messages on one MIDI channel (TABLE mode).

### ⑧ PARAMETER CHANGE field

Here you can make settings for transmission/reception of "parameter change" system exclusive messages.

- **Tx button**.....Switches parameter change transmission on/off.
- **Rx button** .....Switches parameter change reception on/off.
- **ECHO button**
  .....Selects whether incoming parameter changes will be echoed out from the MIDI transmit port.

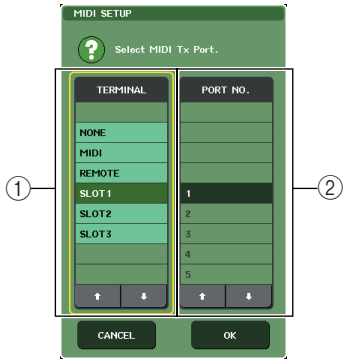
### ⑨ OTHER COMMAND field

Here you can specify how MIDI messages other than program changes, control changes, and parameter changes (i.e., messages such as note-on/off and MIDI timing clock) will be received.

- **ECHO button**
  .....Selects whether other MIDI messages that are received will be echoed out from the MIDI transmit port.

## 4 To specify the port that will be used to transmit or receive each type of MIDI message, press the transmit (Tx) or receive (Rx) port select popup button.

The MIDI SETUP popup window for selecting the port will appear. Operations in this window are the same for both transmission (Tx) and reception (Rx), and include the following items.




### ① TERMINAL field

Select the port that will transmit or receive MIDI messages.

You can choose from the following items.

| Item | Explanation |
|---|---|
| NONE | No port will be used. |
| MIDI | Rear panel MIDI IN (Rx) / OUT (Tx) connector |
| REMOTE (M7CL-32/48) | Rear panel REMOTE connector |
| SLOT 1–3 | A card that supports serial transmission, installed in a rear panel slot 1–3 |

NOTE

- *To transmit and receive MIDI messages to and from an external controller that features an RS422 connector, select REMOTE and connect the REMOTE connector to the external controller.*
- *Refer to the pin assignment table for information on pin assignments.(→ p. 298)*

- **REMOTE connector settings**

| | |
|---|---|
| **Format** | RS422 |
| **Baud rate** | 38400 bps |
| **Data length** | 8bit |
| **Stop bit** | 1 |
| **Parity** | none |
| **Flow control** | none |

### ② PORT NO. field

If you select SLOT 1–3 in the TERMINAL field, choose port number 1–8 in this field. (The number of available ports will depend on the card that is installed.)

The currently available card is valid only for port 1.

## 5 Specify the type of port and the port number.

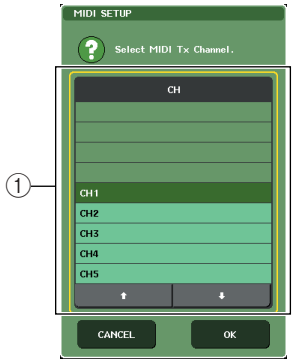
Use the ↑/↓ buttons to select an item. Press the OK button to confirm the selected port and close the MIDI SETUP popup window.

HINT

- *Alternatively, you can select a port by pressing the desired port name in the field, or by pressing the field to highlight it and then turning one of the multifunction encoders to select the port.*

### 6 To specify the channel on which MIDI messages will be transmitted or received, press the channel select popup button.

The MIDI SETUP popup window for selecting the channel will appear. Operations in this window are the same for both transmission (Tx) and reception (Rx), and include the following items.




**① CH field**

Select CH 1–CH 16 as the channel that will be used to transmit or receive MIDI messages.

### 7 Select the channel.

Use the ↑/↓buttons to select an item. Press the OK button to confirm the selected channel and close the MIDI SETUP popup window.

HINT

- *Alternatively, you can select the channel by pressing the desired channel in the field or by turning one of the multifunction encoders.*
- *When transmitting or received parameter changes, the channel number you specify here is used as the device number (a number that identifies the transmitting or receiving unit).*

### 8 Turn transmission/reception on or off for each MIDI message.

HINT

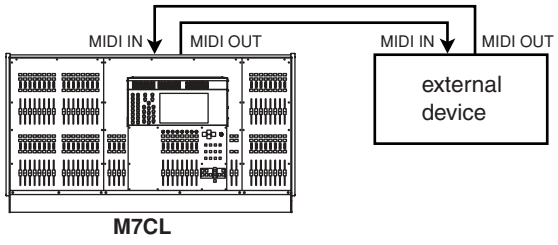
- *For details on using program changes, refer to "Using program changes to recall scenes and library items," below.*
- *For details on using control changes, refer to "Using control changes to control parameters" (→ p. 203).*

# Using program changes to recall scenes and library items

The M7CL lets you assign a specific event (scene recall or effect library recall) to each program change number, so that when this event is executed on the M7CL, a program change message of the corresponding number will be transmitted to an external device. Conversely, the corresponding event can be executed when a program change message is received from an external device.

### 1 Connect the M7CL to your external device.

The following illustration shows an example of using the MIDI IN/OUT connectors to transmit and receive MIDI messages.




### 2 In the function access area, press the SETUP button to access the SETUP screen.

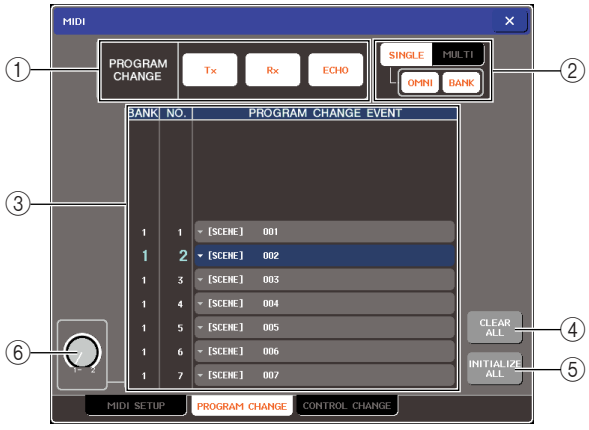
### 3 In the center of the screen, press the MIDI button to access the MIDI popup window.

## 4 Press the MIDI SETUP tab to access the MIDI SETUP page, and select the port and MIDI channel on which program changes will be transmitted and received, as described in "Basic MIDI settings" (→ p. 198).

## 5 Press the PROGRAM CHANGE tab to access the PROGRAM CHANGE page.

In the PROGRAM CHANGE page you can specify how program changes will be transmitted and received, and choose the event (scene recall or effect library recall) that will be assigned to each program number.

This page includes the following items.




### ① PROGRAM CHANGE field

Here you can switch program change transmission/reception on/off, and specify whether program changes will be echoed out. This setting is linked with the PROGRAM CHANGE field of the MIDI SETUP page.

### ② PROGRAM CHANGE MODE field

Here you can select the program change transmit/receive mode. This setting is linked with the PROGRAM CHANGE MODE field of the MIDI SETUP page.

### ③ List

This list shows the event (scene recall / effect library recall) assigned to each program number. The list shows the following items.

- **CH/BANK**.....Indicates the MIDI channel 1–16 on which program changes are transmitted/received. In Single mode if the BANK button is on, this will be labeled BANK, and the numerical value in this column will correspond to the bank number.
- **NO.**.....Indicates the program number 1–128.
- **PROGRAM CHANGE EVENT**
  .....Indicates the type/number/title of the event assigned to the program number for each MIDI channel (bank number). You can press an individual event to access the MIDI PROGRAM CHANGE popup window, where you can change the assignment for each program number.

### ④ CLEAR ALL button

Pressing this button will delete all event assignments in the list.

### ⑤ INITIALIZE ALL button

Pressing this button will restore all event assignments in the list to their default state.

### ⑥ Scroll knob

This knob scrolls the contents of the list. You can use multifunction encoder to control this.

## 6 Use the buttons of the PROGRAM CHANGE MODE field to select the program change transmission/reception mode.

You can select one of the following two program change transmission/reception modes.

● **Multi mode (when the MULTI button is on)**

Program changes of all MIDI channels will be transmitted and received. (The transmit/receive channel specified in the MIDI SETUP page will be ignored.)

When a program change is received, the event assigned to the corresponding MIDI channel and program number in the list will be executed.

When you execute the specified event on the M7CL, the program change of the corresponding MIDI channel and program number in the list will be transmitted.

● **Single mode (when the SINGLE button is on)**

Only program changes of the transmit (Tx) and receive (Rx) channels specified in the MIDI SETUP page will be transmitted and received.

When a program change on the Rx channel is received, the event assigned to that program number of the corresponding channel in the list will be executed.

When you execute the specified event on the M7CL, the program change of the corresponding program number will be transmitted on the Tx channel shown in the list. (If an event is assigned to more than one program number on the same channel, the lowest-numbered program number will be transmitted.)

If you turn on the OMNI button / BANK button in Single mode, operation will change as follows.

- **When the OMNI button is on**
  ..... Program changes of all MIDI channels will be received. However, regardless of the MIDI channel that is received, the event assigned to the corresponding program number of the Rx channel will be executed. Turning on the OMNI button will not change the operation for program change transmission.
- **When the BANK button is on**
  ..... The CH indication in the list will change to BANK (bank number), and bank select (control change #0, #32) + program change messages can be transmitted and received. This is convenient when you want to control more than 128 events on a single MIDI channel.

When bank select and then program change messages (in that order) are received on the Rx channel, the event assigned to that bank number and program number in the list will be executed.

When you execute a specific event on the M7CL, bank select + program change messages for the bank number and program number assigned to that event will be transmitted on the Tx channel. (If the same event is assigned more than once in the list, the lowest-numbered bank number and program number will be transmitted.)

NOTE

- *The settings of the OMNI and BANK buttons are ignored in Multi mode.*
- *If the BANK button is on and only a program change on an applicable MIDI channel is received, the last-selected bank number will be used.*

HINT

- *If the BANK button is on, the OMNI button can also be turned on at the same time. In this case, bank select + program change messages of all MIDI channels will be received.*

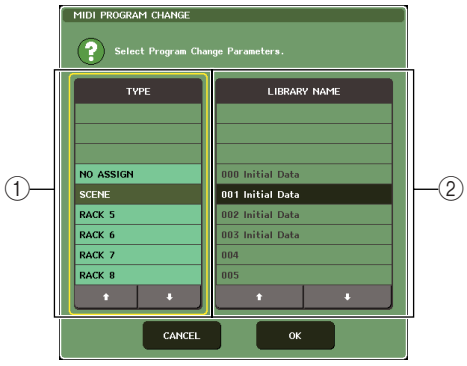
## 7 Use the buttons of the PROGRAM CHANGE field to turn transmission and reception on/off, and make settings for echo output.

This field includes the following items.

- **Tx button**
  Switches program change transmission on/off.
- **Rx button**
  Switches program change reception on/off.
- **ECHO button**
  This selects whether incoming program changes are echoed-out from the MIDI transmission port.

## 8 To change the event assignment for each program number, press the desired event in the list.

The MIDI PROGRAM CHANGE popup window will appear. In this window you can specify the event assigned to each program number. The popup window includes the following items.




### ① TYPE field

Select the type of event.

The following table lists the events you can select.

| Item | Content |
|---|---|
| **NO ASSIGN** | No assignment |
| **SCENE** | Scene memory recall operations |
| **RACK 5–8** | Effect library recall operations for racks 5–8 (only if an effect is mounted) |

### ② LIBRARY NAME field

Select the scene or library item to recall. If you selected SCENE in the TYPE field, this shows the scene number and its title. If you selected RACK 5–8, this shows the library number and its title.

## 9 Use the TYPE field to select the type of event you want to assign, and use the LIBRARY NAME field to select the scene/library number that will be recalled.

Use the ↑/↓ buttons to select an item. Press the OK button to confirm the change and close the MIDI PROGRAM CHANGE popup window.

HINT

- *You can also select the desired event or scene/library in this field by pressing it.*
- *If you press a field to highlight the selected item, you can turn any of the multifunction encoders to select the event or scene/library.*

## 10 Assign events to other program numbers in the same way.

With these settings, executing the specified event on the M7CL will cause the corresponding program change (or bank select + program change) message to be transmitted to the external device.

When an external device transmits a program change (or bank select + program change) message on the appropriate channel, the event assigned to that program number of the corresponding MIDI channel (or bank number) will be executed.

HINT

- *You can use the CLEAR ALL button to erase all assignments to program numbers. The INITIALIZE ALL button will return all program number assignments to their default state.*
- *Assignments to program numbers are maintained as settings for the entire system, rather than for individual scenes.*

NOTE

- *In Single mode, if the same event is assigned to more than one program number on a Tx channel, only the lowest program number will be transmitted. (If the BANK button is on, only the program number of the lowest bank number will be transmitted.)*
- *In Multi mode, if the same event is assigned to more than one MIDI channel and more than one program number, only the lowest program number on each MIDI channel will be transmitted.*

# Using control changes to control parameters

You can use MIDI control change messages to control specified events (fader/encoder operations, [ON] key on/off operations etc.) on the M7CL. This capability can be used to record fader and key operations on a MIDI sequencer or other external device, and play back this data later. You can use control changes to control events in either of the following two ways.

### ● Using control changes

This method uses typical control changes (control numbers 1–31, 33–95, 102–119). You can freely assign an event to each control number.

### ● Using NRPN (Non Registered Parameter Number)

This method uses a special type of control change messages called NRPN.
NRPN uses control change numbers 99 and 98 to specify the MSB (Most Significant Byte) and LSB (Least Significant Byte) of the parameter number, and subsequently-transmitted control change messages of control change number 6 (or 6 and 38) to specify the value of that parameter.
The event assigned to each combination of MSB and LSB is pre-defined, and cannot be changed.

HINT

*• For details on the events assigned to NRPN messages, refer to the appendix (→ p. 274).*

**1 Connect the M7CL to your external device.**

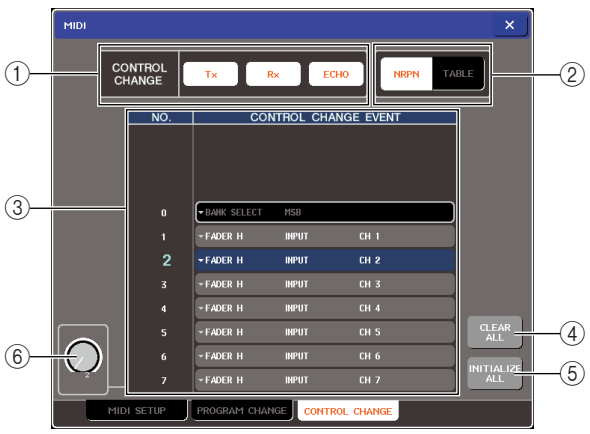
**2 In the function access area, press the SETUP button to access the SETUP screen.**

**3 In the center of the screen, press the MIDI button to access the MIDI popup window.**

**4 Press the MIDI SETUP tab to access the MIDI SETUP page, and select the port and MIDI channel on which control changes will be transmitted and received, as described in "Basic MIDI settings" (→ p. 198).**

**5 Press the CONTROL CHANGE tab to access the CONTROL CHANGE page.**

In the CONTROL CHANGE page you can specify how control changes will be transmitted and received, and assign the event (fader/encoder operation, [ON] key on/off operation, etc.) assigned to each control number. This page includes the following items.




#### ① CONTROL CHANGE field

Here you can switch control change transmission/reception on/off, and specify whether control changes will be echoed out. This setting is linked with the CONTROL CHANGE field of the MIDI SETUP page.

#### ② CONTROL CHANGE MODE field

Here you can select the control change transmission/reception mode. This setting is linked with the CONTROL CHANGE MODE field of the MIDI SETUP page.

#### ③ List

This list shows the event (fader/encoder pattern, [ON] key on/off operation, etc.) assigned to each control number.

- **NO.** ..... This indicates the control number. You can use control numbers 1–31, 33–95, and 102–119.
- **CONTROL CHANGE EVENT** ..... Indicates/selects the type of event assigned to each control number. When you press an event, the MIDI CONTROL CHANGE popup window will appear, allowing you to change the control number assignment.

#### ④ CLEAR ALL button

Pressing this button will delete all event assignments in the list.

#### ⑤ INITIALIZE ALL button

Pressing this button will restore all event assignments in the list to their default state.

#### ⑥ Scroll knob

This knob scrolls the contents of the list. You can use multifunction encoder to control this.

## 6 Use the buttons of the CONTROL CHANGE MODE field to select the control change transmission/reception mode.

You can choose one of the following two modes for control change transmission/reception.

- **NRPN mode (when the NRPN button is on)**
  The M7CL's various mix parameters will be transmitted and received on a single MIDI channel as NRPN messages. If you select this mode, the assignments in the list will be ignored.
- **TABLE mode (when the TABLE button is on)**
  The M7CL's various mix parameters will be transmitted and received on a single MIDI channel as control change messages.

HINT

- *The channel on which control changes are transmitted and received is specified by the MIDI SETUP page PORT/CH field (→ p. 198).*

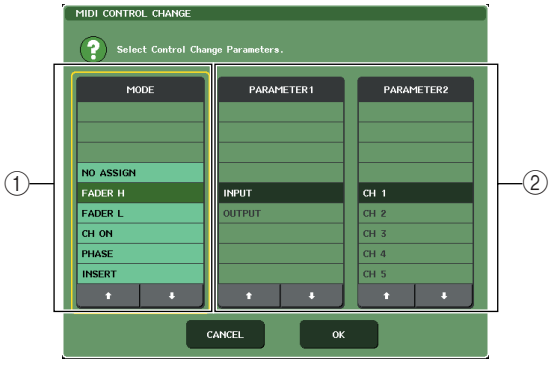
## 7 Use the buttons of the CONTROL CHANGE field to turn transmission and reception on/off, and make settings for echo output.

Each button has the following function.

- **Tx button**
  Switches control change transmission on/off.
- **Rx button**
  Switches control change reception on/off.
- **ECHO button**
  Selects whether incoming control changes will be echoed out from the MIDI transmit port.

## 8 To change the event assignment for each control number, press the corresponding event.

The MIDI CONTROL CHANGE popup window will appear. In this window you can specify the event assigned to each control number. The window contains the following items.




### ① MODE field

Select the type of event.

### ② PARAMETER 1/2 field

In conjunction with the MODE field, this specifies the type of event.

NOTE

- *If NRPN mode is selected as the control change transmission/reception mode, the settings in this window are ignored.*

HINT

- *For details on the events that can be assigned to control changes, refer to the appendix (→ p. 270).*

## 9 In the order of the MODE field → PARAMETER 1 field → PARAMETER 2 field, specify the type of event you want to assign.

Use the ↑/↓ buttons to select an item. Press the OK button to confirm the change and close the MIDI CONTROL CHANGE popup window.

HINT

- *You can also press the desired event in the field to select it.*
- *You can press a field to highlight the item you want to select, and then turn one of the multifunction encoders to select an event.*

## 10 Assign events to other control numbers in the same way.

When you operate the parameters you assigned on the M7CL, control change messages will be transmitted to external devices. Similarly, if the corresponding control change messages are sent from an external device on the appropriate channel, the parameters assigned to those control numbers will change.

HINT

- *You can use the CLEAR ALL button to erase all assignments to control numbers. The INITIALIZE ALL button will return all control number assignments to their default state.*
- *Assignments to control numbers are maintained as settings for the entire system, rather than for individual scenes.*

# Using parameter changes to control parameters

On the M7CL, you can use a type of system exclusive messages called “parameter changes” to control specific events (fader/encoder operations, [ON] key on/off operations, etc.) as an alternative to using control changes or NRPN messages.
For details on the parameter changes that can be transmitted and received, refer to “MIDI data format” in the appendix.

**1 Connect the M7CL to your external device.**

**2 In the function access area, press the SETUP button to access the SETUP screen.**

**3 In the center of the screen, press the MIDI button to access the MIDI popup window.**

**4 Press the MIDI SETUP tab to access the MIDI SETUP page, and select the port and MIDI channel on which parameter changes will be transmitted and received, as described in “Basic MIDI settings” (→ p. 198).**

NOTE

- *Parameter changes include a “device number” that specifies the transmitting or receiving device. The transmit (Tx) channel and receive (Rx) channel specified in the MIDI SETUP page are used as the device number.*
- *Please be aware that if the device number included in the transmitted parameter change does not match the device number of the receiving M7CL console, the message will be ignored.*
- *If parameter change and control change transmission/reception are turned on at the same time, a large amount of data will flood the MIDI port and cause overflows or other problems, so you should avoid this.*

**5 Use the Tx button and Rx button of the PARAMETER CHANGE field to turn on parameter change transmission/reception.**

In this state when you operate specific parameters on the M7CL, the corresponding parameter change messages will be transmitted. If valid parameter change messages are transmitted from an external device, the parameters assigned to those parameter changes will be controlled.

# ◆ Chapter 18 ◆
# User settings (Security)

This chapter explains the User Level settings that allow restrictions on the parameters that can be operated by each user, the Console Lock function that temporarily disables operation of the console, the Preferences settings that allow the operating environment to be customized, and Save/Load operations using USB storage devices.

## User Level settings

User Level settings allow you to restrict the parameters that be operated by each user, or to change the settings of user-defined keys and preference settings for each user. Settings for each user can be stored as a “user authentication key” on a USB storage device, allowing users to be switched easily, simply by connecting this storage device to a USB connector. This is convenient in the following situations.

- Unintended or mistaken operation can be prevented.
- The range of functionality operable by an outside engineer (guest engineer) can be limited.
- In situations in which multiple operators alternate with each other, output settings etc. can be locked to prevent unintended operations.
- Preferences of each operator can easily be switched.

### User types and user authentication keys

There are three types of user, as follows. In order to operate the M7CL, you must log-in as a user.

- **Administrator .....This is the administrator of the M7CL, and can use all of its functionality. Only one set of Administrator settings is maintained inside the M7CL. The Administrator can create user authentication keys for other users.**
- **Guest.....The Guest can use only the range of functionality permitted by the Administrator. Only one set of Guest settings is maintained inside the M7CL.**
- **User.....A User can use only the range of functionality permitted by the Administrator. User settings are saved on a USB storage device as a user authentication key. Multiple sets of User settings can be saved with different user names. A User who has Power User privileges can create or edit user authentication keys with a specified user level.**

When a user logs on, the user settings for that user are applied. User settings include the following information.

- **Password (except for Guest)**
- **User level (except for Administrator)**
- **Preferences**
- **User-defined keys**

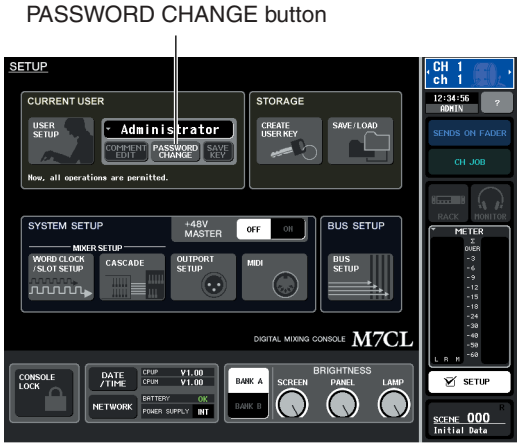
Privileges for each user are as follows.

| Logged-in user | | User-defined keys and preferences editing | User Level setting | Password setting | Comment editing | User authentication key (USB storage device) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Create new | Overwrite-save |
| Administrator | | Available (can edit Administrator settings and Guest settings) | Available (cannot edit, since Administrator can always perform all operations/ Guest settings can be edited) | Available | — | Available | — |
| User | Power user | Available | Available | Available | Available | Available | Available |
| | Normal user (user without Power User privileges) | Available | N/A (viewing only) | Available | Available | — | Available (only settings other than User Level) |
| Guest | | Available | N/A (viewing only) | — | Available | — | — |

## Setting the Administrator password

With the factory settings, the Administrator password is not set, meaning that anyone can log in with Administrator privileges and perform all operations. If you want to restrict the operations of other users, you must specify an Administrator password.

### 1 In the function access area, press the SETUP button to access the SETUP screen.




### 2 Press the PASSWORD CHANGE button.

A keyboard window will appear, allowing you to enter a password.

### 3 Enter the password in the NEW PASSWORD field, then enter the same password in the RE-ENTER PASSWORD field for verification, and finally press the OK button.

The password can be up to eight characters. If the two passwords that were entered match, the Administrator password will be set.

For details on entering a password, refer to “Entering names” (→ p. 34).

## Creating a user authentication key

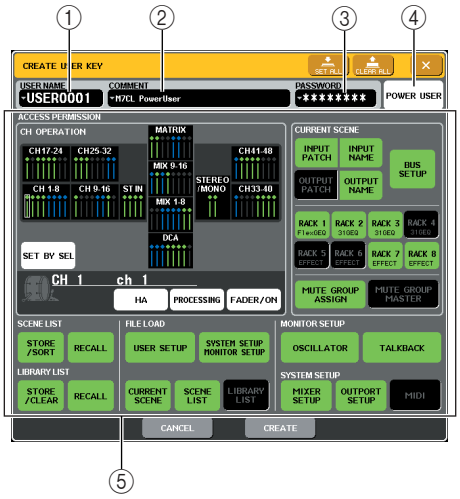
Here's how to create a user authentication key and save it on a USB storage device. A user authentication key can be created only by an Administrator or Power User. The user level can be specified when the authentication key is created, but the user-defined key settings and preference settings will be carried over from the user who is currently logged-in.

### 1 Connect a USB storage device to the USB connector.

### 2 In the function access area, press the SETUP button to access the SETUP screen.

### 3 Press the CREATE USER KEY button.

The CREATE USER KEY popup window will appear.




#### ① USER NAME

Here you can specify or view a user name of up to eight characters. Press this to access a keyboard window where you can enter the user name.

#### ② COMMENT

Here you can specify or view a comment of up to thirty-two characters about the user. Press this to access a keyboard window where you can enter the comment.

#### ③ PASSWORD

Specify a password of up to eight characters. Press this to access a keyboard window where you can enter the password.

#### ④ POWER USER

Specifies whether Power User privileges will be granted to this user.

#### ⑤ ACCESS PERMISSION

These settings specify the range of operations that the user can perform. For details on each item, refer to p. 212.

### 4 When you have specified the user name, comment, password, power user privileges on/off, and user rights, press the CREATE button.

If you are logged-in as the Administrator, the user authentication key will be saved on the USB storage device.

If you are logged-in as a Power User, a dialog box will ask you to confirm the store-destination USB storage device. If you want to save the user authentication key on a different USB storage device, connect the desired USB storage device and then press [OK]. The user authentication key will be saved, and the logged-in user will automatically switch to the newly created user.

## Logging-in

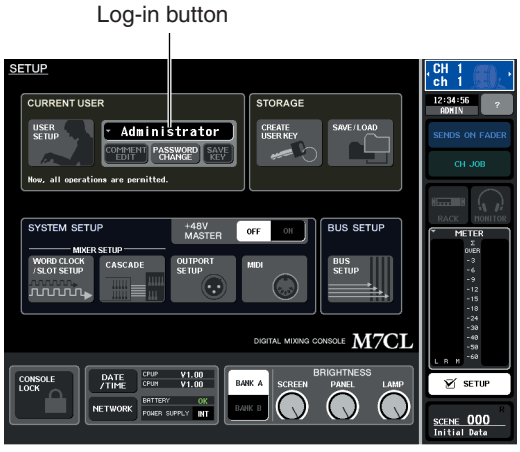
In order to operate the M7CL, you must log in as the Administrator, Guest, or a User.
User settings for the Administrator and Guest are saved in the console itself, but in order to log in as a User you must connect a USB storage device on which a user authentication key has been saved. If you disconnect the USB storage device after logging-in, your access privileges will forcibly revert to Guest.

NOTE

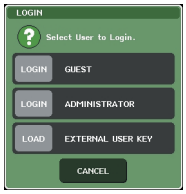
*• If the M7CL'S power is turned off and then on again, it will generally start up in the log-in state in which the power was turned off. If a user password has been assigned, you will need to enter the password. However if you cancel the input, you will be forcibly logged-in as Guest. Similarly, you will also be forcibly logged-in as Guest if you had been logged-in as a user requiring a user authentication key, but the USB storage device is no longer connected.*

### ● Logging-in as Administrator

#### 1 In the function access area, press the SETUP button to access the SETUP screen.



### 2 Press the log-in button to open the LOGIN window.




### 3 Press the LOGIN button for ADMINISTRATOR.

If no Administrator password has been set, you will simply be logged-in. If a password has been set, a keyboard window will appear, allowing you to enter the password.

### 4 Enter the password and press the OK button.

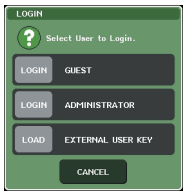
For details on entering a password, refer to "Entering names" (→ p. 34).

If the password was incorrect, a message of "WRONG PASSWORD" will appear in the bottom of the screen.

## ● Logging-in as Guest

### 1 In the function access area, press the SETUP button to access the SETUP screen.

### 2 Press the log-in button to open the LOGIN window.




### 3 Press the LOGIN button for GUEST to log-in.

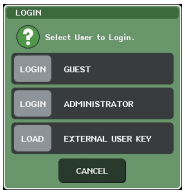
## ● Logging-in as a User

To log-in as a User, you will use a user authentication key saved on a USB storage device. You may also log-in using a user authentication key created on a different M7CL console.

### 1 Connect a USB storage device to the USB connector.

### 2 In the function access area, press the SETUP button to access the SETUP screen.

### 3 Press the log-in button to open the LOGIN window.




### 4 Press the LOAD button for EXTERNAL USER KEY.

The SAVE/LOAD popup window will appear, and the files and directories saved on the USB storage device will be displayed. User authentication keys have a file name of "User name.M7U".

### 5 Turn multifunction encoder to select the user authentication key for the user as whom you want to log-in.

For details on loading from a USB storage device, refer to "Loading a file from a USB storage device" (→ p. 219).

### 6 Press the LOAD button.

If no password has been set, you will simply be logged-in. If a password has been set, a keyboard window will appear, allowing you to enter the password.

NOTE

- *If you select a user authentication key that was created on a different M7CL console, a keyboard window will appear, allowing you to enter the Administrator password of the M7CL that you will be using. (If the Administrator passwords are identical, this window will not appear.) When you enter the correct Administrator password, another keyboard window will appear, allowing you to enter the password for the selected user.*
- *If you re-save the user authentication key, you will not be asked for the Administrator password the next time. (→ p. 212 Editing a user authentication key)*

### 7 Enter the password and press the OK button.

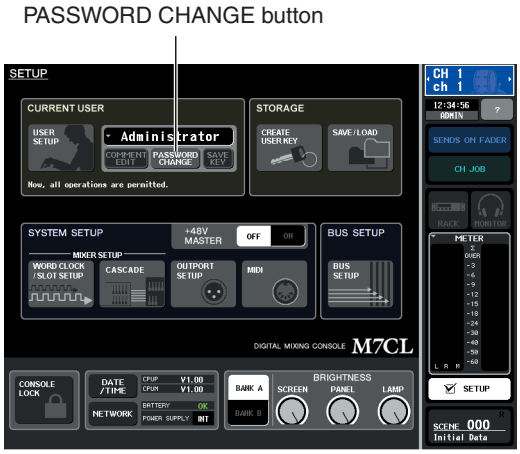
For details on entering a password, refer to “Entering names” (→ p. 34).

If the password was incorrect, a message of “WRONG PASSWORD” will appear in the bottom of the screen.

## Changing the password

Here’s how to change the password of the logged-in user. A change in the Administrator password is updated immediately. A change in a User password will be discarded if the user simply logs-out; it must be applied to the user authentication key before the user logs-out. The Guest account does not have a password.

### 1 In the function access area, press the SETUP button to access the SETUP screen.




### 2 Press the PASSWORD CHANGE button.

A keyboard window will appear, allowing you to enter a password.

### 3 Enter the current password and press the OK button.

For details on entering a password, refer to “Entering names” (→ p. 34).

When you enter the correct password, a keyboard window will appear, allowing you to enter the new password.

### 4 Enter the new password in the NEW PASSWORD field, then enter the same password in the RE-ENTER PASSWORD field for verification, and finally press the OK button.

If the two passwords that were entered match, the new password will be set.

## Editing a user authentication key

If you are logged-in as a user, you can edit your user-defined keys, preference settings, comments and password, and overwrite (save) them onto your user authentication key. If you are logged-in as a Power User, you can also change the user level.

**1 Log-in as a user, and edit the user-defined keys (→ p. 216) and preference settings (→ p. 214).**

If you are logged-in as a Power User, you can also change the user level.

**2 In the function access area, press the SETUP button to access the SETUP screen.**

**3 Press the SAVE KEY button.**

A dialog box will ask whether you really want to overwrite (save) the user authentication key.

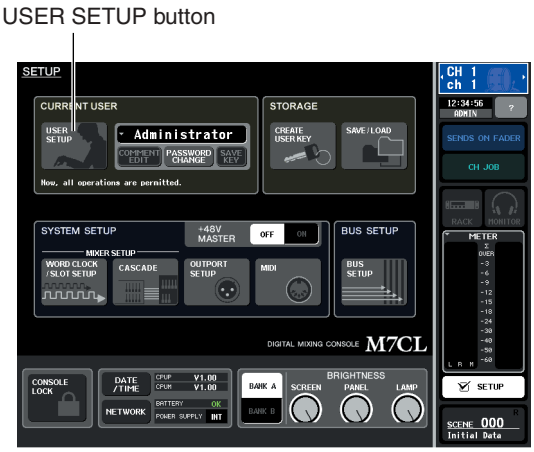
**4 Press OK to overwrite (save) the user authentication key.**

## Changing the user level

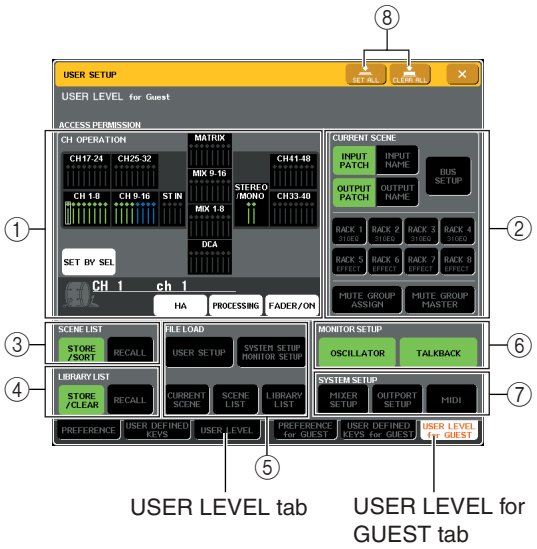
Here's how to view or change the user level.

- **For the Administrator**
  **..... There is no such setting for the Administrator himself, but the setting for the Guest account can be changed.**
- **For the Guest**
  **..... The setting of the Guest account can be viewed. It cannot be changed.**
- **For a normal User**
  **..... The setting of that User account can be viewed. It cannot be changed.**
- **For a Power User**
  **..... The setting of that User account can be changed.**

**1 In the function access area, press the SETUP button to access the SETUP screen.**




**2 Press the USER SETUP button to access the USER SETUP popup window.**



### 3 Press the USER LEVEL tab to access the USER LEVEL page.

If you are logged-in as the Administrator, you can switch to the USER LEVEL for GUEST page, and view or change the user level of the Guest account.

This page includes the following items.

#### ① CH OPERATION

Here you can specify (for each channel) the operations that will be permitted for input channels, output channels, and DCA groups. The settings will apply to the currently selected channel. Settings for currently-selected channels will be displayed below the CH OPERATION section. Use the panel [SEL] keys or the Selected Channel field in the function access area to select the channel for which you want to make settings.

- **HA**.....Restricts operation of the HA (Head Amp) patched to that channel.
- **PROCESSING**
  .....Restricts operation of all signal processing parameters for that channel (except for fader, [ON] key, send level, etc.)

HINT

*• For the channel parameters included in PROCESSING, refer to the appendix (p. 277).*

- **FADER / ON** ...Restricts operation of that channel's fader, [ON] key, send level, etc.
- **SET BY SEL** ...If this button is on, a group of multiple channels can be set to the same settings in a single operation. To select channels, turn this button on, and then press the [SEL] keys of the desired channels on the panel. If you change the setting of any channel in the group, the change will affect all channels in the group. Channels that have the same settings are shown with the same color in the channel display field.

#### ② CURRENT SCENE

This specifies the operations that can be performed on the current scene memory.

- **INPUT PATCH / NAME**
  .....Operations for input channel patching and names will be restricted.
- **OUTPUT PATCH / NAME**
  .....Operations for output channel patching and names will be restricted.
- **BUS SETUP** ...Operations for bus setup will be restricted.
- **RACK 1–8** ..... Operations for the racks (1–8) will be restricted.
  However, there will be no restriction on operating the MIDI CLK button displayed for delay-type and modulation-type effects, or the PLAY/REC button displayed for the FREEZE effect.
- **MUTE GROUP ASSIGN / MASTER**
  ..... Operations for mute group assignment and mute group master will be restricted.

#### ③ SCENE LIST

This specifies the operations that can be performed on scene memories.

- STORE / SORT operations
- RECALL operations

#### ④ LIBRARY LIST

This specifies the operations that can be performed on libraries.

- STORE / CLEAR operations
- RECALL operations

#### ⑤ FILE LOAD

This specifies the types of file that can be loaded from a USB storage device. The user authentication key contains the user level, user-defined keys, and preference settings. Other data is saved in an "ALL" file.

- USER SETUP (user-defined keys and preference settings)
- SYSTEM SETUP / MONITOR SETUP
- CURRENT SCENE
- SCENE LIST
- LIBRARY LIST

#### ⑥ MONITOR SETUP

This specifies the monitor setup operations that can be performed.

- OSCILLATOR
- TALKBACK

#### ⑦ SYSTEM SETUP

This specifies the system setup operations that can be performed.

- MIXER SETUP
- OUTPUT SETUP
- MIDI
- STAGE BOX SETUP

#### ⑧ SET ALL/CLEAR ALL button

This button permits/clears all items.

### 4 Specify the user level by pressing the button for each item that will be permitted.

### 5 When you have finished making settings, close the popup window and press the SETUP button in the function access area.

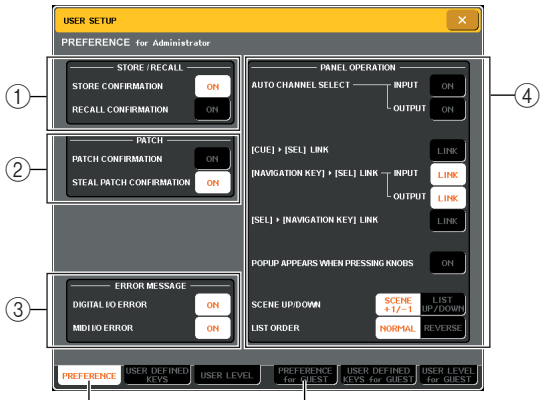
# Preferences

Here's how you can make various settings for the M7CL's operating environment, such as how popup windows appear, and whether SEL key operations will be linked. These settings are changed for the user who is logged-in, but if you are logged-in as the Administrator, you will also be able to change the Guest settings.

## 1 In the function access area, press the SETUP button to access the SETUP screen.

USER SETUP button

## 2 Press the USER SETUP button to access the USER SETUP popup window.




PREFERENCE tab PREFERENCE for GUEST tab

## 3 Press the PREFERENCE tab to access the PREFERENCE page.

If you are logged-in as the Administrator, you can also switch to the PREFERENCE for GUEST page and make preference settings for the Guest account.

This page includes the following items.

### ① STORE / RECALL

These buttons let you turn on/off options related to scene store/recall operations. You can select the following options.

- **STORE CONFIRMATION**
- **RECALL CONFIRMATION**

..... If these buttons are on, a confirmation message will appear when you perform a Store or Recall operation respectively.

### ② PATCH

These buttons let you turn on/off options related to patch operations. You can select the following options.

- **PATCH CONFIRMATION**

..... If this button is on, a confirmation message will appear when you edit an input patch or output patch.

- **STEAL PATCH CONFIRMATION**

..... If this button is on, a confirmation message will appear when you edit an input patch or output patch item that is already patched.

### ③ ERROR MESSAGE

Here you can select whether a warning will be displayed when the following problems occur.

- **DIGITAL I/O ERROR**

..... This appears if a sync error is detected in the digital input/output.

- **MIDI I/O ERROR**

..... This appears if an error is detected in MIDI transmission/reception.

### ④ PANEL OPERATION

These buttons let you turn on/off options related to panel operations. You can select the following options.

- **AUTO CHANNEL SELECT – INPUT**
- **AUTO CHANNEL SELECT – OUTPUT**

These specify whether the corresponding channel will be selected when you operate a channel's [ON] key or fader. This can be turned on/off separately for INPUT CH (input channels) and OUTPUT CH (output channels).

- **[CUE]→[SEL] LINK**

Specifies whether channel selection will be linked with cue operations. If this button is on, turning the [CUE] key of a channel OFF to ON will simultaneously select that channel and light its [SEL] key.

- **[NAVIGATION KEY]→[SEL] LINK – INPUT**
- **[NAVIGATION KEY]→[SEL] LINK – OUTPUT**

Specifies whether channel selection will be linked with operations of the navigation keys. If this button is on, pressing the desired navigation key will cause the [SEL] key of the most recently selected channel in the Centralogic section to light.

This can be turned on/off separately for INPUT CH (input channels) and OUTPUT CH (output channels).

- **[SEL]→[NAVIGATION KEY] LINK**

Specifies whether the navigation key selection will be linked with channel selection. If this button is on, selecting a channel will cause the corresponding navigation key for that channel to also be selected.

● **POPUP APPEARS WHEN PRESSING KNOBS**

Specifies whether pressing a knob of the SELECTED CHANNEL section when the SELECTED CHANNEL VIEW screen is shown will cause a popup window (1 ch) to appear. If this button is on, a popup window (1 ch) will appear (or close) whenever you press a knob.

NOTE

*• For SEND and PAN, a popup window for eight channels will appear.*

● **SCENE UP/DOWN**

This specifies what the SCENE MEMORY [▲]/[▼] keys will do when pressed in the SCENE screen. You can choose one of the following two operations.

- **SCENE +1/-1**

  .....Pressing the SCENE MEMORY [▲] key will select the next highest-numbered scene, and pressing the SCENE MEMORY [▼] key will select the next lowest-numbered scene. (Key presses will increment/decrement the scene number.)

- **LIST UP/DOWN**

  .....Pressing the SCENE MEMORY [▲] key will scroll the list upward, and pressing the SCENE MEMORY [▼] key will scroll the list downward. (The up/down key corresponds to the direction in which the list will scroll.)

● **LIST ORDER**

This specifies the order in which scene memories and library items will appear in the screen.

- **NORMAL** .....Show the list in ascending numerical order.
- **REVERSE**.....Show the list in descending numerical order.

**4 Use the buttons in the screen to make preference settings.**

**5 When you have finished making settings, close the popup window and press the SETUP button in the function access area.**

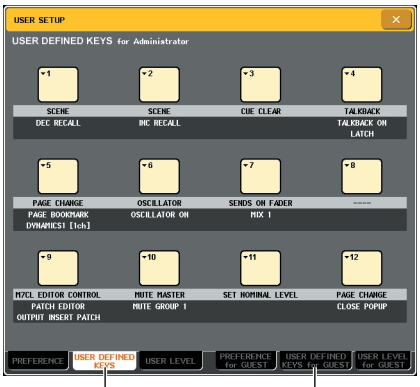
# User-defined keys

Here's how you can assign the desired functions to the user defined keys in the USER DEFINED section of the top panel, and press these keys to execute the defined function.
This assignment procedure will define the user-defined keys for the user who is currently logged-in, but if you are logged-in as the Administrator, you can also make user-defined key settings for the Guest account.

## 1 In the function access area, press the SETUP button to access the SETUP screen.

USER SETUP button

## 2 Press the USER SETUP button to access the USER SETUP popup window.


USER SETUP
USER DEFINED KEYS for Administrator
1 SCENE DEC RECALL
2 SCENE INC RECALL
3 CUE CLEAR
4 TALKBACK TALKBACK ON LATCH
5 PAGE CHANGE PAGE BOOKMARK DYNAMICS1 [1ch]
6 OSCILLATOR OSCILLATOR ON
7 SENDS ON FADER MIX 1
8
9 M7CL EDITOR CONTROL PATCH EDITOR OUTPUT INSERT PATCH
10 MUTE MASTER MUTE GROUP 1
11 SET NOMINAL LEVEL
12 PAGE CHANGE CLOSE POPUP
PREFERENCE
USER DEFINED KEYS
USER LEVEL
PREFERENCE for GUEST
USER DEFINED KEYS for GUEST
USER LEVEL for GUEST

USER DEFINED KEYS tab

USER DEFINED KEYS for GUEST tab

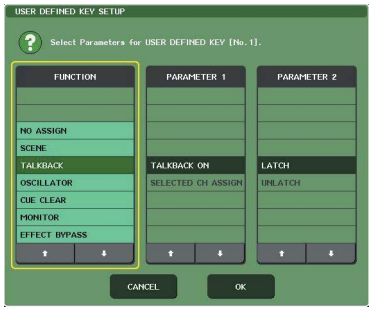
## 3 Press the USER DEFINED KEYS tab to select the USER DEFINED KEYS page.

If you are logged-in as the Administrator, you can also select the USER DEFINED KEYS for GUEST page to make user-defined key settings for the Guest account.

The twelve buttons in the screen corresponds to user-defined keys [1]–[12] on the panel, and the function or parameter assigned to each one is shown below the corresponding button. If nothing is assigned to the button, an indication of "—" is shown.

## 4 Press the button for the user-defined key to which you want to assign a function.

The USER DEFINED KEY SETUP window will appear. In this window you can select a function to assign to the user defined key, and select option parameters.




## 5 Make sure that the FUNCTION field is enclosed by a yellow frame, and then use the [↑]/[↓] buttons in the lower part of the field or the multifunction encoders of the panel to select the function you want to assign.

For details on the assignable functions and their parameters, refer to "Functions that can be assigned to user-defined keys" (→ p. 280).

## 6 If the selected function has parameters, press the PARAMETER 1 or 2 field to move the yellow frame, and select parameters 1 and 2 in the same way.

## 7 Press the OK button to close the USER DEFINED KEY SETUP window.

## 8 Assign the desired functions to other user-defined keys in the same way.

## 9 To execute an assigned function, press the corresponding USER DEFINED [1]–[12] key on the panel.

# Console lock

You can temporarily prohibit console operations in order to prevent unwanted operation. This setting completely disables operations of the panel and touch screen, so that controls cannot be operated by an accidental touch or by an unauthorized third party while the operator is taking a break.
If a password is set for the currently logged-in user, that password will be used for the Console Lock function.

NOTE

- *If you have forgotten the password, refer to "Initializing the M7CL's internal memory" ( p. 238).*
- *The Guest cannot set a password.*
- *Even while the console is locked, control from an external device via MIDI or M7CL Editor will still operate as usual.*

## Locking the console

**1 In the function access area, press the SETUP button to access the SETUP screen.**

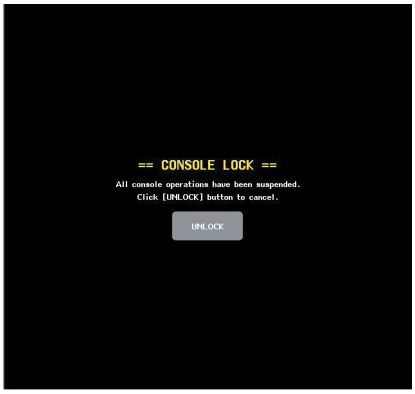
CONSOLE LOCK button

**2 Press the CONSOLE LOCK button.**

If you are logged-in as a user for whom a password is set, a keyboard window will appear, allowing you to enter the password. For details on entering a password, refer to "Entering names" (→ p. 34).

**3 Enter the password for the logged-in user, and press the OK button.**

The CONSOLE LOCK screen will appear, the Console Lock function will be enabled, and all controls except MONITOR LEVEL knob will become inoperable.




## Unlocking the console

**1 In the CONSOLE LOCK screen, press the UNLOCK button.**

If you are logged-in as a user for whom no password is set, the console will be unlocked.

If you are logged-in as a user for whom a password is set, a keyboard window will appear, allowing you to enter the password.

**2 Enter the password for the logged-in user, and press the OK button.**

The console will be unlocked, you will return to the SETUP screen, and the controls will be operable once again.

HINT

- *You may disconnect the USB storage device while the console is locked. Reconnect the USB storage device before you press the UNLOCK button.*

# Using a USB storage device to save/load data

This section explains how you can connect a commercially-available USB storage device to the USB connector located at the right side of the display, and use it to save or load internal settings of the M7CL or user authentication keys.

NOTE

- *Operation is guaranteed only with USB flash memory.*
- *The operation of storage media with capacities of up to 16GB has been verified. (However, this does not necessarily guarantee the operation of all USB storage media.) The FAT12, FAT16 and FAT32 formats are supported. On the M7CL V1.12 or higher, storage media with a capacity of 4GB or larger will be formatted in FAT32 and storage media with a capacity of 2GB or smaller will be formatted in FAT16. Long file names are not supported.*

**⚠ CAUTION**

- ***An ACCESS indicator is shown in the function access area while data is being accessed (saved, loaded, or deleted). Do not disconnect the USB connector or power-off the M7CL while this indicator is shown. Doing so may damage the data on the storage media.***

## Saving the M7CL's internal data on a USB storage device

Here's how all of the M7CL's internal data (except for the data included in a user authentication key) can be saved on the USB storage device as a file. The saved file will have an extension of ".M7C".

### 1 In the function access area, press the SETUP button to access the SETUP screen.

### 2 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.

### 3 If necessary, press the directory icon and change the directory.

To move to the next higher level, press the arrow button in the PATH field.

### 4 Press the SAVE button.

A keyboard window will appear, allowing you to enter a file name and comment.

### 5 Enter a file name of up to eight characters, a comment of up to 32 characters, and press the SAVE button.

When the file has finished being saved, the popup window showing the save progress indication and the type of data will close.

NOTE

- *If you are going to overwrite a file or save a file with the same name in the same folder, a dialog will ask you to confirm the overwrite.*

# Loading a file from a USB storage device

Here's how to load a M7CL setting file (.M7C) from the USB storage device on which it was saved.
You can also load M7CL V1 and V2 files.
If you load an MCL-32/48 file into the M7CL-48ES, or an M7CL-48ES file into the M7CL-32/48, the patch settings will change as shown in the table below.
If you plan to load a file created by the M7CL V3 or later, convert the file if necessary. For more information on converting the file, please refer to "Converting and loading the file content from a USB storage device" (→ p. 220)

| M7CL-32/48 + STAGE BOX | | M7CL-48ES |
|---|---|---|
| INPUT 1–16 | ↔* | ES IN 1–16 |
| INPUT 17–32 | ↔* | ES IN 17–32 |
| INPUT 33–48 | ↔* | ES IN 33–48 |
| ST IN 1L–4R | ↔ | OMNI IN 1–8 |
| SLOT1 IN 1–16 | ↔ | SLOT1 IN 1–16 |
| SLOT2 IN 1–16 | ↔ | SLOT2 IN 1–16 |
| SLOT3 IN 1–16 | ↔ | SLOT3 IN 1–16 |
| TALKBACK | ↔ | TALKBACK |
| OMNI OUT 1–16 | ↔ | ES OUT 1–16 |
| No assign | ↔ | ES OUT 17–24 |
| No assign | ↔ | OMNI OUT 1–8 |
| SLOT1 OUT 1–16 | ↔ | SLOT1 OUT 1–16 |
| SLOT2 OUT 1–16 | ↔ | SLOT2 OUT 1–16 |
| SLOT3 OUT 1–16 | ↔ | SLOT3 OUT 1–16 |
| 2TR DIGITAL OUT | ↔ | 2TR DIGITAL OUT |

* The same HA settings will be used.

## 1 In the function access area, press the SETUP button to access the SETUP screen.

## 2 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.

## 3 To select the file you want to load, press the desired file in the file list, or turn multifunction encoder on the panel.

The highlighted line in the file list indicates the file that is selected for operations.

## 4 Press the LOAD button, and a confirmation dialog box will appear.

## 5 Press the OK button to begin loading the file.

When the file has finished being loaded, the popup window showing the progress indication and the type of data will close. Even if you cancel during this procedure, the data up to that point will have been loaded. Some setting data may not be loaded, depending on the USER LEVEL setting during the load operation.

# Converting and loading the file content from a USB storage device

Here's how to convert and load the patch settings for the internal/external HA of an M7CL setting file (.M7C) that was saved to a USB storage device by the M7CL V3. The original setting file remains intact. Save the converted file as a different file, if necessary.
After conversion, the patch settings change as follows:

- **Conversion between the M7CL-32/48's INTERNAL HA and an external HA connected to the M7CL-32/48**

| Using Internal HA | | Using External HA via Slot |
|---|---|---|
| INPUT 1–16 | ↔* | SLOT1 IN 1–16 |
| INPUT 17–32 | ↔* | SLOT2 IN 1–16 |
| INPUT 33–48 | ↔* | SLOT3 IN 1–16 |
| ST IN 1L–4R | ↔ | ST IN 1L–4R |
| SLOT1 IN 1–16 | ↔ | INPUT 1–16 |
| SLOT2 IN 1–16 | ↔ | INPUT 17–32 |
| SLOT3 IN 1–16 | ↔ | INPUT 33–48 |
| TALKBACK | ↔ | TALKBACK |
| OMNI OUT 1–16 | ↔ | SLOT1 OUT 1–16 |
| SLOT1 OUT 1–16 | ↔ | OMNI OUT 1–16 |
| SLOT2 OUT 1–16 | ↔ | SLOT2 OUT 1–16 |
| SLOT3 OUT 1–16 | ↔ | SLOT3 OUT 1–16 |
| 2TR DIGITAL OUT | ↔ | 2TR DIGITAL OUT |

- **Conversion between an external HA connected to the M7CL-32/48 and M7CL-48ES**

| Using External HA via Slot | | | M7CL-48ES |
|---|---|---|---|
| INPUT 1–16 | | ↔* | SLOT1 IN 1–16 |
| INPUT 17–32 | | ↔* | SLOT2 IN 1–16 |
| INPUT 33–48 | | ↔* | SLOT3 IN 1–16 |
| ST IN 1L–4R | | ↔ | OMNI IN 1–8 |
| SLOT1 IN 1–16 | | ↔ | ES IN 1–16 |
| SLOT2 IN 1–16 | | ↔ | ES IN 17–32 |
| SLOT3 IN 1–16 | | ↔ | ES IN 33–48 |
| TALKBACK | | ↔ | TALKBACK |
| OMNI OUT 1–16 | | ↔ | SLOT1 OUT 1–16 |
| SLOT1 OUT 1–16 | | ↔ | ES OUT 1–16 |
| SLOT2 OUT | 1–8 | ↔ | ES OUT 17–24 |
| | 9–16 | ↔ | OMNI OUT 1–8 |
| No assign | | ↔ | SLOT2 OUT 1–16 |
| SLOT3 OUT 1–16 | | ↔ | SLOT3 OUT 1–16 |
| 2TR DIGITAL OUT | | ↔ | 2TR DIGITAL OUT |

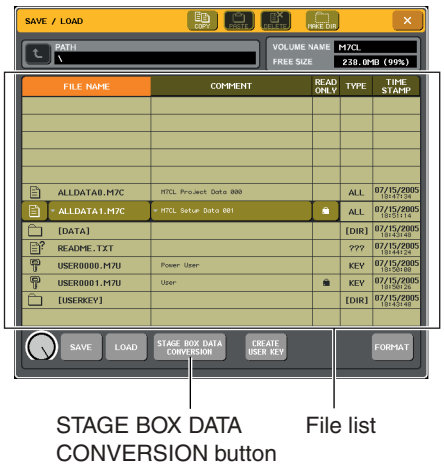
* The same HA settings will be used.

NOTE

- *If you plan to convert a file that was saved by the M7CL V2.0 or earlier, first load the file, save it using the M7CL V3.0 or later, then convert the newly saved file.*

## 1 In the function access area, press the SETUP button to access the SETUP screen.

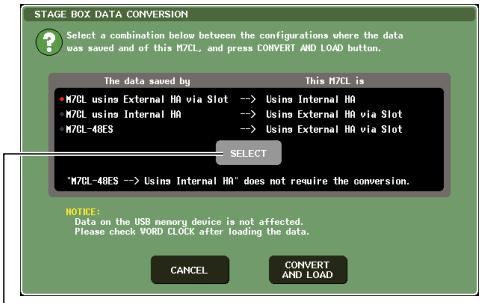
## 2 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.




## 3 To select the file you want to load, press the desired file in the file list, or turn multifunction encoder on the panel.

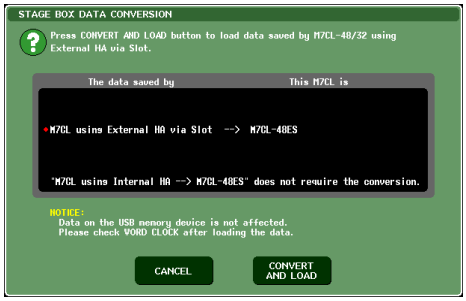
The highlighted line in the file list indicates the file that is selected for operations.

**4 Press the STAGE BOX DATA CONVERSION button to display the STAGE BOX DATA CONVERSION dialog box.**


STAGE BOX DATA CONVERSION
Select a combination below between the configurations where the data was saved and of this M7CL, and press CONVERT AND LOAD button.
The data saved by
This M7CL is
M7CL using External HA via Slot --> Using Internal HA
M7CL using Internal HA --> Using External HA via Slot
M7CL-48ES --> Using External HA via Slot
SELECT
"M7CL-48ES --> Using Internal HA" does not require the conversion.
NOTICE:
Data on the USB memory device is not affected.
Please check WORD CLOCK after loading the data.
CANCEL
CONVERT AND LOAD

M7CL-32/48

SELECT button


STAGE BOX DATA CONVERSION
Press CONVERT AND LOAD button to load data saved by M7CL-48/32 using External HA via Slot.
The data saved by
This M7CL is
M7CL using External HA via Slot --> M7CL-48ES
"M7CL using Internal HA --> M7CL-48ES" does not require the conversion.
NOTICE:
Data on the USB memory device is not affected.
Please check WORD CLOCK after loading the data.
CANCEL
CONVERT AND LOAD

M7CL-48ES

**5 On the M7CL-32/48, press the SELECT button repeatedly to select a file type to convert.**

**6 Press the CONVERT AND LOAD button to start the conversion and loading operation.**

Once the file has been converted and loaded, the popup window showing a progress indicator and the type of data will close. If you cancel this procedure while it is in progress, data up to the cancellation point will still be loaded. Some setting data may not load, depending on the USER LEVEL setting during the conversion operation.

# Editing the files saved on a USB storage device

Here's how you can perform editing operations such as sorting the files and directories on a USB storage device, editing the file names or comments, copying, or pasting.

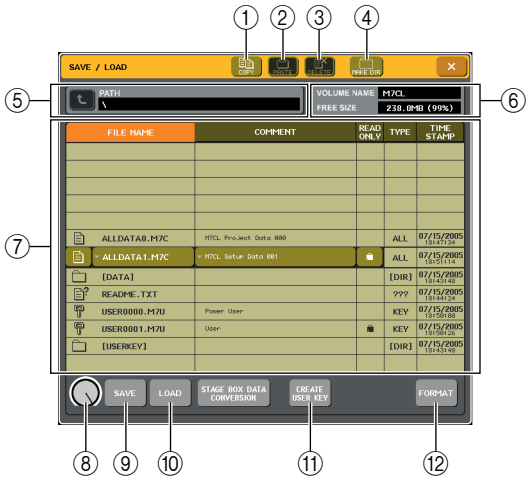
## ● File editing

**1 In the function access area, press the SETUP button to access the SETUP screen.**

SAVE/LOAD button

**2 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.**

The list will show the files and sub-directories that have been saved.




### ① COPY button

This button copies a file into buffer memory (a temporary holding area) (→ p. 223).

### ② PASTE button

This button pastes the file from buffer memory (→ p. 223).

### ③ DELETE button
This button deletes the selected file (→ p. 223).

### ④ MAKE DIR button
This button creates a new directory (→ p. 224).

### ⑤ PATH
This shows the name of the current directory. Press the arrow button to move to the next higher level. If the current directory is the top level, the arrow button is dimmed.

NOTE

- *You cannot save if the directory name would exceed 237 characters.*

### ⑥ VOLUME NAME/FREE SIZE
This shows the volume name and the amount of free space on the USB storage device. If the USB storage device is write-protected, a protect symbol is shown in the VOLUME NAME field.

### ⑦ File list
This area lists the files that are saved on the USB storage device. The highlighted line indicates the file selected for operations.

The file list contains the following items. When you press the item name at the top of each column, it will turn orange, and the list will be sorted by that item. Each time you press the item name, the sorting order will alternate between ascending and descending order.

- **FILE NAME**.....Indicates the file name or directory name, and shows an icon indicating its type.
- **COMMENT** .....For M7CL files, shows the comment.
- **READ ONLY** ...A lock symbol is shown to indicate protected files. You can press this area to enable or disable the protect setting.
- **FILE TYPE** .....This field indicates the file type. The following file types will be displayed:

| | |
|---|---|
| **[DIR]** | Directories |
| **KEY** | User key files |
| **XML** | XML files (HELP files) |
| **TEXT** | Text files |
| **ALL V1.0** | Files saved by the M7CL V1 |
| **ALL V1.1** | Files saved by the M7CL V1.1 |
| **ALL V2.0** | Files saved by the M7CL V2 |
| **ALL** | Files saved by the M7CL V3 |
| **SCENE** | Files saved via the Scene window in M7CL editor (including V2 and V3) |
| **DYNAMICS** | Files saved via the Library window in M7CL editor (including V2 and V3) |
| **INPUT EQ** | |
| **OUTPUT EQ** | |
| **EFFECT** | |
| **GEQ** | |
| **INPUT CH** | |
| **OUTPUT CH** | |
| **???** | Unknown files |

- **TIME STAMP**
  ..... This shows the date and time at which the file was last modified.

NOTE

- *The file list can display only up to one hundred items.*

### ⑧ File selection knob
This knob selects a file shown in the file list. You can operate this knob using multifunction encoder.

### ⑨ SAVE button
Saves all of the M7CL's internal settings together (→ p. 218).

### ⑩ LOAD button
Loads the selected M7CL setting file (→ p. 219).

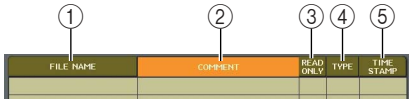
### ⑪ CREATE USER KEY button
Creates a user authentication key (→ p. 209).

### ⑫ FORMAT button
Formats media on the USB storage media (→ p. 224).

## 3 Perform the desired editing operation.
For details on the procedure, refer to the explanations that follow.

## ● Sorting files and editing file names/ comments

### 1 To sort the files, press one of the titles "FILE NAME," "COMMENT," "READ ONLY," "FILE TYPE," or "TIME STAMP" at the top of each column in the file list.
The list will be sorted as follows, according to the column title you pressed.




### ① FILE NAME
Sort the list in alphanumerical order of file name.

### ② COMMENT
Sort the list in alphanumeric order of the comment.

### ③ READ ONLY
Sort the list according to Write Protect on/off status.

### ④ FILE TYPE
Sort the list according to file type.

### ⑤ TIME STAMP
Sort the list in order of date/time of editing.

HINT

- *By pressing the same location again, you can change the direction (ascending or descending) in which the list is sorted.*

**2 If you want to edit the file name or comment, press the FILE NAME field or COMMENT field of each file to access the keyboard window.**

For details on entering text, refer to "Entering names" (→ p. 34).

**3 Enter a file name or comment, and press the RENAME button or SET button.**

**4 To turn the protect setting on/off, press the READ ONLY field of the file.**

A protect symbol is displayed for write-protected files; these files cannot be overwritten.

NOTE

- *You cannot edit the file name or comment of a write-protected file.*

## ● Copying/pasting a file

Here's how to copy a desired file into buffer memory, and then paste it with a different file name.

**1 Turn multifunction encoder to select the copy-source file, and press the COPY button.**

The highlighted line in the file list indicates the file that is selected for operations.

**2 If necessary, press the directory icon and change the directory.**

To move to the next higher level, press the arrow button in the PATH field.

**3 Press the PASTE button.**

A keyboard window will appear, allowing you to enter the file name.

For details on entering text, refer to "Entering names" (→ p. 34).

**4 Enter the file name, and press the PASTE button.**

NOTE

- *You can't paste with an existing file name.*

## ● Deleting a file

**1 Turn multifunction encoder to select the file you want to delete, and press the DELETE button.**

A dialog box will ask you to reconfirm the Delete operation.

**2 To execute the Delete operation, press the OK button.**

NOTE

- *You can't delete a protected file.*

### ● Creating a directory

**1 If necessary, press the directory icon and change the directory.**

To move to the next higher level, press the arrow button in the PATH field.

**2 Press the MAKE DIR button.**

A keyboard window will appear, allowing you to enter a directory name.

For details on entering text, refer to “Entering names” (→ p. 34).

**3 Enter the name of the directory you want to create, and press the MAKE button.**

NOTE

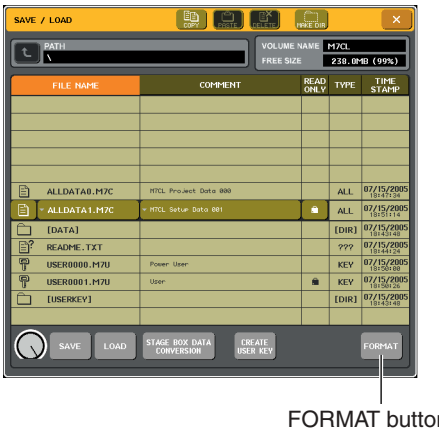
- *You cannot create a directory using a directory name that already exists.*

## Formatting media on a USB storage device

Here’s how to format media on a USB storage device. On the M7CL V1.12 or higher, storage media with a capacity of 4GB or larger will be formatted in FAT32, and storage media with a capacity of 2GB or smaller will be formatted in FAT16.

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.**




**3 Press the FORMAT button.**

A keyboard window will appear, allowing you to enter the volume name that will be applied after formatting.

For details on entering text, refer to “Entering names” (→ p. 34).

**4 Enter a volume name, and press the FORMAT button.**

A dialog box will ask you to confirm the Format operation.

**5 To execute the Format operation, press the OK button.**

# Chapter 19
# Help function

You can view the Help file provided by Yamaha, or you can view any desired text file created by a user.

* We accept no responsibility for any damages that may occur as a result of using help files created by a third party other than Yamaha.

## Loading a Help file from a USB storage device

NOTE

*• The help file is not backed up in internal user memory. Each time you turn on the power, you must reload it from your USB storage device. It is convenient to save your help file on the USB storage device that contains your user authentication key.*

**1 Before you proceed, save the Help file (extension .xml) provided by Yamaha on your USB storage device. You can download the most recent version of the Help file from the Yamaha website.**

http://www.yamahaproaudio.com/

**2 In the function access area, press the SETUP button to access the SETUP screen.**

**3 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.**

**4 To select the Help file (extension: .xml) you want to load, press one of the Help files shown in the file list, or turn multi-function encoder on the panel.**

**5 Press the LOAD button; a confirmation dialog box will appear.**

**6 Press the OK button to load the file.**

# Loading a text file from a USB storage device

**1 Using a commercially available text editor or the "Notepad" included with the Microsoft Windows series, create a text file (extension .txt) and save it on your USB storage device.**

By default, the character code set of the text file will be detected as UTF-8. However by adding a line consisting of [ISO-8859-1] or [Shift_JIS] at the beginning of the file, you can force recognition of the file using that character code set. You can specify the desired character code set when using your text editor to save the text file.

The Help function is able to display the following text files (character code sets / languages).

- Text files written in the ISO-8859-1 character code set (English, German, French, Spanish, etc.)
- Text files written in the Shift_JIS character code set (Japanese)
- Text files of the above languages written in the UTF-8 character code set.

**2 In the function access area, press the SETUP button to access the SETUP screen.**

**3 Press the SAVE/LOAD button to access the SAVE/LOAD popup window.**

**4 To select the text file you want to load, press one of the text files shown in the file list or turn multi-function encoder on the panel.**

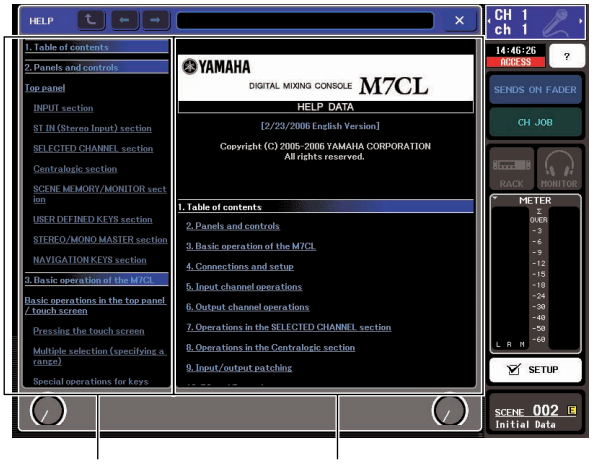
**5 Press the LOAD button; a confirmation dialog box will appear.**

**6 Press the OK button to load the file.**

# Viewing Help

**1 Before you proceed, load the help file or text file from your USB storage device.**

**2 In the function access area, press the [?] (Help) button to access the HELP popup window.**




**3 By turning multi-function encoders 1–2 you can scroll the index area at the left. By turning multi-function encoders 3–8 you can scroll the main area at the right.**

**4 By pressing a link (underlined text) in the text, you can scroll to the linked destination.**

By pressing a window link (a location with an → symbol and underlined text), you can close the HELP window and open the corresponding window.

**5 As necessary, you can also scroll by using the buttons in the tool bar.**

- [↰] button.....Scrolls to the chapter that precedes the currently-displayed location.
- [←] button.....Returns to the preceding item in the history of links you pressed.
- [→] button.....Proceeds to the subsequent item in the history of links you pressed.

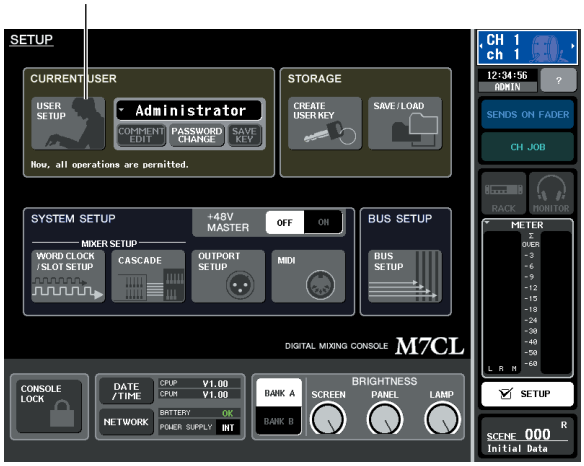
**6 To close the window, press the [?] (Help) button of the function access area or the "×" button of the HELP popup window.**

# Using user-defined keys to recall Help directly

**1 Before you proceed, load the Help file from your USB storage device.**

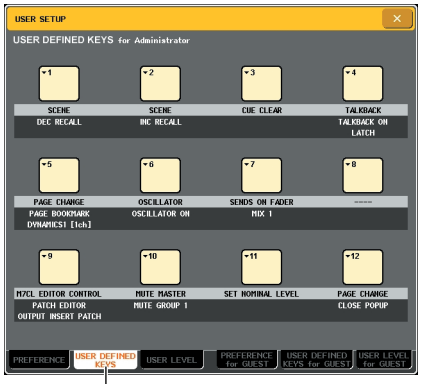
**2 In the function access area, press the SETUP button to access the SETUP screen.**

USER SETUP button




**3 In the upper left of the screen, press the USER SETUP button to access the USER SETUP popup window.**

**4 Press the USER DEFINED KEYS tab to select the USER DEFINED KEYS page.**




USER DEFINED KEYS tab

**5** **Press the button corresponding to the user-defined key to which you want to assign the Help function.**

**6** **In the FUNCTION column, choose "HELP" and press the OK button.**

**7** **When you've finished assigning the function to the user-defined key, press the "×" symbol to close the USER DEFINED KEYS page.**

**8** **In the function access area, press the SETUP button to close the SETUP screen.**

## ■ Recalling the HELP popup window using only a user-defined key

**9** **Press the user-defined key to which the Help function is assigned; the HELP popup window will appear.**

**10** **To close the window, once again press the user-defined key to which the Help function is assigned.**

## ■ Directly recalling the Help for a specific panel controller

**9** **While holding down the user-defined key to which you've assigned the Help function, press (or turn) the panel controller whose function you want to read about.**

Panel controllers (other than the faders) will not function as long as you continue holding down the user-defined key to which the Help function is assigned.

**10** **If the corresponding controller has an explanation associated with it, the HELP popup window will appear, and you will automatically scroll to the corresponding item.**

If there are multiple explanations for the same controller, you can repeat step 9 to successively display these explanations.

**11** **To close the window, once again press the user-defined key to which the Help function is assigned.**

## ■ Directly recalling the Help for a specific controller in the LCD screen

**9** **While holding down the user-defined key to which you've assigned the Help function, press the on-screen controller whose function you want to read about.**

The on-screen buttons and tabs will not function as long as you continue holding down the user-defined key to which the Help function is assigned.

**10** **If there is a corresponding Help item, the HELP popup window will appear and you will automatically scroll to the corresponding item.**

If there are multiple explanations for the same controller, close the HELP popup window and then repeat step 9 to successively view these explanations.

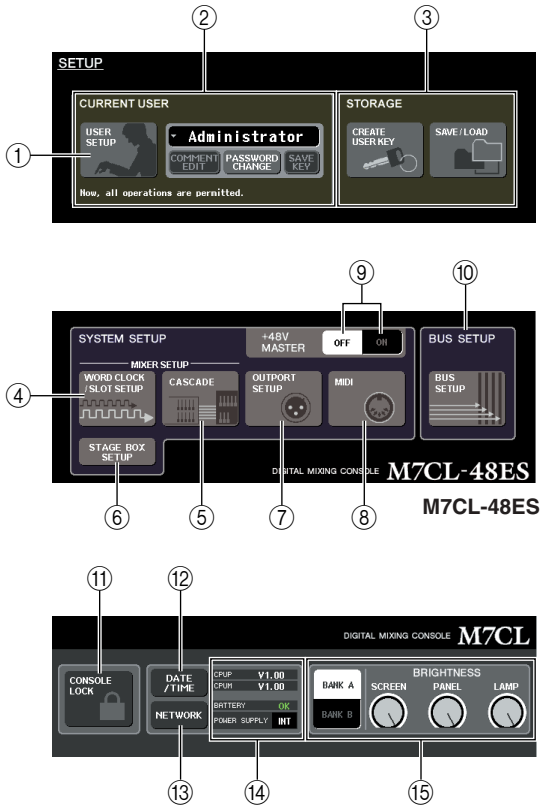
**11** **To close the window, once again press the user-defined key to which the Help function is assigned.**

# ◆ Chapter 20 ◆
# Other functions

This chapter explains other functionality of the M7CL not covered elsewhere.

## About the SETUP screen

In the SETUP screen you can make various settings that apply to the entire M7CL. To access the SETUP screen, press the SETUP button in the function access area. The screen contains the following items.




### ① USER SETUP button

Use this button to access the USER SETUP popup window, where you can restrict the functionality available to each user and make system settings.

### ② CURRENT USER field

Here you can switch users and change passwords (→ p. 209).

### ③ STORAGE field

Here you can save/load user settings on a USB storage device, or create a user key (→ p. 218).

### ④ WORD CLOCK/SLOT SETUP button

Use this button to access the WORD CLOCK/SLOT SETUP popup window, where you can make settings for word clock and for the I/O cards installed in slots 1–3 (→ p. 230).

### ⑤ CASCADE button

Use this button to access the CASCADE popup window, where you can make settings for cascade connections (→ p. 232).

### ⑥ STAGE BOX SETUP button (M7CL-48ES)

Use this button to display the VIRTUAL RACK window with the EXT-ES HA field open. This field enables you to switch the STAGE BOX SETUP function on and off (→ p. 242).

### ⑦ OUTPORT SETUP button

Use this button to access the OUTPUT PORT popup window, where you can make output port settings (→ p. 106).

### ⑧ MIDI button

Use this button to access the MIDI popup window, where you can make MIDI-related settings (→ p. 198).

### ⑨ +48V MASTER ON/OFF button

This button switches the phantom master power on/off.

NOTE

*• If this button is off, phantom power will not be supplied even if the +48V button of each channel is on.*

### ⑩ BUS SETUP button

Use this button to access the BUS SETUP popup window, where you can make settings for bus operation and switch between mono/stereo (→ p. 234).

### ⑪ CONSOLE LOCK button

Use this button to enable the Console Lock function, which temporarily disables panel operations (→ p. 217).

### ⑫ DATE/TIME button

Use this button to access the DATE/TIME popup window, where you can set the internal clock (→ p. 235).

### ⑬ NETWORK button

Use this button to access the NETWORK popup window, where you can make network settings (→ p. 236).

### ⑭ Version / Power Supply field

This area shows the current firmware version, and information about the power supply.

- **CPUM/CPUP**.. The firmware version is shown separately for each CPU; “CPUM” (main CPU) and “CPUP” (display control CPU).

• **BATTERY**.....This indicates the voltage of the internal backup battery. This will indicate OK if operation is normal, or LOW or NO if the voltage is low.

NOTE

*• The LOW or NO indication will appear if the battery runs down. If this occurs, immediately save your data on a USB storage device and contact your Yamaha dealer.*

• **POWER SUPPLY**
.....This indicates the status of the internal power supply (INT) and external power supply (EXT).

### ⑮ BRIGHTNESS field

Here you can control the brightness of the screen, panel, and lamps. The corresponding multifunction encoder can be used to operate the knobs that control the brightness. You can also use the BANK A/B buttons to save two different sets of brightness settings (→ p. 237).

# Word Clock and Slot settings

"Word clock" refers to the clock that provides the basis of timing for digital audio signal processing. If you connect external equipment such as a DAW system or HDR (Hard Disk Recorder) to a digital I/O card installed in slot 1–3, this equipment must be synchronized to the same word clock in order for digital audio signals to be sent and received. If digital audio signals are transferred in an unsynchronized state, the data will not be transmitted or received correctly, and noise may be present in the signal, even if the sampling rates are the same.
Specifically, you must first decide which device will transmit the reference word clock for the entire system (the word clock master), and then set the remaining devices (the word clock slaves) so that they synchronize to the word clock master.
If you wish to use the M7CL as a word clock slave that is synchronized to the word clock supplied from an external device, you must specify the appropriate clock source (the port through which the word clock is obtained).
The following steps show how to select the clock source that the M7CL will use.

## 1 In the function access area, press the SETUP button to access the SETUP screen.

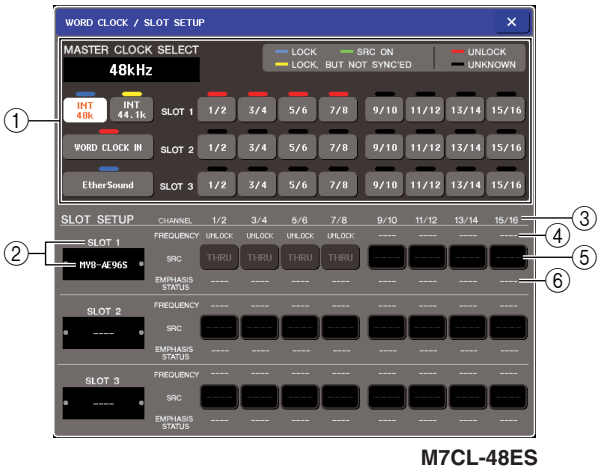
In the SETUP screen you can make settings that apply to the entire M7CL.

### ① SYSTEM SETUP field

### ② WORD CLOCK/SLOT SETUP button

## 2 In the SYSTEM SETUP field at the center of the screen, press the WORD CLOCK/SLOT SETUP button to open the WORD CLOCK/ SLOT SETUP popup window.

This popup window contains the following items.




M7CL-48ES

### ① MASTER CLOCK SELECT field

Use the buttons to select the clock source you want to use as the word clock master. The frequency of the clock on which the M7CL is currently operating is shown in the upper left of this field. (This will indicate "UNLOCKED" if synchronization is not achieved, such as immediately after the master clock has been switched.)

### ② Slot number / Card type
This area shows the type of digital I/O card installed in slots 1–3.

### ③ CHANNEL
This area shows the channel numbers of the digital I/O card(s) installed in slots 1–3.

### ④ FREQUENCY (Clock frequency)
This indicates the clock frequency of the signal being input to each channel of the digital I/O card, in sets of two channels.

### ⑤ SRC (Sampling Rate Converter)
These buttons are on/off switches (in two groups of two channels) for the sampling rate converters that automatically convert an external clock frequency to match the M7CL. This is available only for slots in which a digital I/O card with a built-in sampling rate converter is installed.

### ⑥ EMPHASIS STATUS
This indicates whether emphasis is applied to the input signal, in sets of two channels. This item is only for display, and cannot be edited. This is available only for slots in which a digital I/O card is installed.

## 3 In the MASTER CLOCK SELECT field, select the desired clock source.

You can choose one of the following clock sources.

- **INT 48 k**
- **INT 44.1 k**
  The M7CL's internal clock (sampling rate 48 kHz or 44.1 kHz, respectively) will be the clock source. Choose one of these if you want to use the M7CL as the word clock master.
- **WORD CLOCK IN**
  The word clock supplied from the rear panel WORD CLOCK IN jack will be used as the clock source. In this case, the M7CL will operate as a word clock slave.
- **EtherSound(M7CL-48ES)**
  The word clock supplied from the EtherSound connector will be used as the clock source. In this case, the M7CL will operate as a word clock slave. If the AUTO CONFIGURE button is turned on in the ring connection, the EtherSound clock source will be automatically selected.

NOTE

- *Select EtherSound if the AUTO CONFIGURE button is turned off under one of the following circumstances:*
  - *The devices are connected in a ring connection.*
  - *The M7CL-48ES is inside a daisy chain.*

- **SLOT 1–3**
  The clock data of the digital audio signal supplied via a digital I/O card in slot 1–3 (selectable in two-channel units) will be used as the clock source. In this case, the M7CL will operate as a word clock slave.

The status (operating state) of the clock data being received from each port is indicated by the color of the symbol displayed immediately above. Each color has the following significance.

- **LOCK (light blue)**
  This indicates that a clock synchronized with the selected source is being input. If an external device is connected to the corresponding connector or slot, input/output is occurring normally between that device and the M7CL. If the sampling frequency is close, this status may be displayed even if not synchronized.
- **LOCK, BUT NOT SYNC'ED (yellow)**
  A valid clock is being input, but is not synchronized with the selected clock source. If an external device is connected to the corresponding connector, input/output cannot occur correctly between that device and the M7CL.
- **SRC ON (green)**
  This is a special status only for SLOT 1–3, indicating that the corresponding channel's SRC (Sampling Rate Converter) is enabled. This means that even if the signal is not synchronized, normal input/output with the M7CL is occurring.
- **UNLOCK (red)**
  A valid clock is not being input. If an external device is connected to the corresponding connector, input/output cannot occur correctly between that device and the M7CL.
- **UNKNOWN (black)**
  This indicates that the clock status cannot be detected because no external device is connected or because there is no valid clock input. You will be able to select this connector/slot, but successful synchronization cannot occur until a valid connection is established.

If the symbol for the port selected in step 3 has turned light blue, and the clock frequency is shown at the upper left of the MASTER CLOCK SELECT field, this indicates that the M7CL is operating correctly with the new clock.

HINT

- *If you use a digital I/O card that contains a sampling rate converter (MY8-AE96S), input and output can occur normally with the M7CL even when unsynchronized. In this case, turn on the SRC button for the slot/channel that is receiving the signal.*

NOTE

- *If the symbol for the selected clock does not turn light blue, make sure that the external device is correctly connected, and that the external device is set to transmit clock data.*
- *Noise may occur at the output jacks when the word clock setting is changed. In order to protect your speaker system, be sure to turn down the power amp volume before changing the word clock setting.*
- *If you attempt to select a channel whose SRC is on as the word clock source, a message will appear, warning you that the sampling rate converter will be disabled.*

## 4 To close the WORD CLOCK/SLOT SETUP popup window, press the "×" symbol located in the upper right.

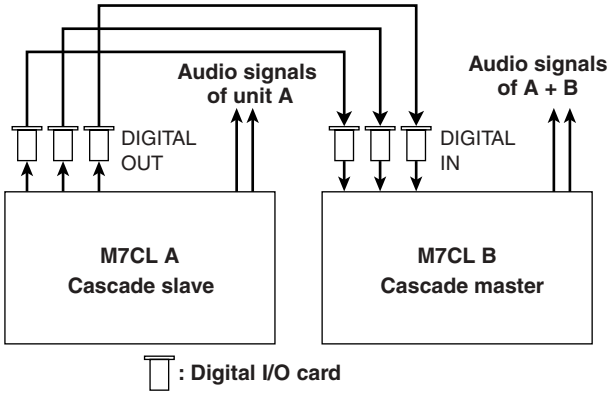
You will return to the SETUP screen.

## 5 To close the SETUP screen, press the SETUP button in the function access area.

# Using cascade connections

By cascade-connecting two or more M7CL units or an M7CL with an external mixer (such as the Yamaha PM5D) you can share the buses. For example this is convenient when you want to use an external mixer to increase the number of inputs.
Here we will explain cascade connections and operation, using an example in which two M7CL units are cascade-connected.

To cascade two M7CL units, you will install digital I/O cards in their respective slots, and connect the output ports of the sending unit (the cascade slave) to the input ports of the receiving unit (the cascade master).
The following illustration shows an example in which three eight-channel digital I/O cards for each unit are installed in the cascade slave M7CL and in the cascade master M7CL, and the DIGITAL OUT jacks of the sending unit connected to the DIGITAL IN jacks of the receiving unit.




In this example, up to twenty four buses chosen from MIX bus 1–16, MATRIX bus 1–8, STEREO bus (L/R), MONO(C) bus, and CUE bus (L/R) can be shared, and the mixed signals transmitted from the cascade master M7CL. (If you use sixteen-channel digital I/O cards, you'll be able to share all buses.)
You do not need to make settings on each M7CL to specify the slot/channel to which each bus is assigned. The procedure below is given separately for the cascade slave and the cascade master.

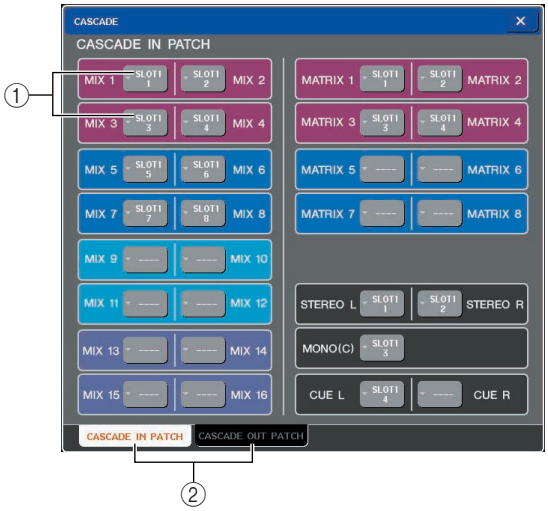
HINT

- *If you're cascade-connecting the M7CL with the PM5D, you can use the M7CL as the cascade slave if you set the PM5D's CASCADE IN PORT SELECT to a slot. However, only the audio signals will be cascaded, and the control signals cannot be linked.*
- *You can also use an AD/DA card to make cascade connections with an analog mixer.*
- *There is no limit to the number of units that can be cascade-connected, but the signal delay at the cascade slave will increase according to the number of units from the cascade master.*

## Operations on the cascade slave M7CL

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the SYSTEM SETUP field located in the center of the SETUP screen, press the CASCADE button to open the CASCADE popup window.**




The CASCADE popup window contains the following items.

### ① Port select popup buttons

These buttons access a popup window where you can select the input/output port for each bus.

### ② CASCADE IN PATCH/CASCADE OUT PATCH tabs

These switch between the CASCADE IN PATCH page and the CASCADE OUT PATCH page.

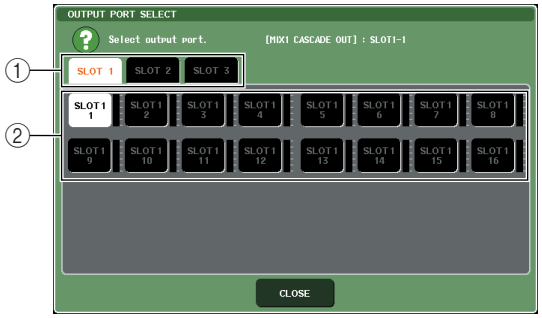
The CASCADE popup window is divided into two pages; a CASCADE IN PATCH page where you can select the input ports for the cascade connection, and a CASCADE OUT PATCH page where you can select the output ports. Use the tabs located in the lower left of the screen to switch between these pages.

**3 Press the CASCADE OUT PATCH tab to access the CASCADE OUT PATCH page.**

In this screen you can select the slot and output port that will output each bus.

**4 Press the port select popup button for the bus whose port you want to assign.**

The OUTPUT PORT SELECT popup window will appear.




This popup window contains the following items.

① **Slot select tabs**
These tabs select slots 1–3.

② **Port select buttons**
These buttons select the port of the specified slot.

**5 Use the slot select tabs and port select buttons to select the desired slot and output ports, and press the CLOSE button.**

The port will be assigned to the bus you selected.

**6 Repeat steps 4 and 5 to assign ports to other buses.**

HINT

- *You can't assign two or more buses to the same output port. If you select a bus to which a signal route has already been assigned, the previous assignment will be cancelled.*

**7 To close the CASCADE popup window, press the "×" symbol located in the upper right.**

You will return to the SETUP screen.

## Operations on the cascade master M7CL

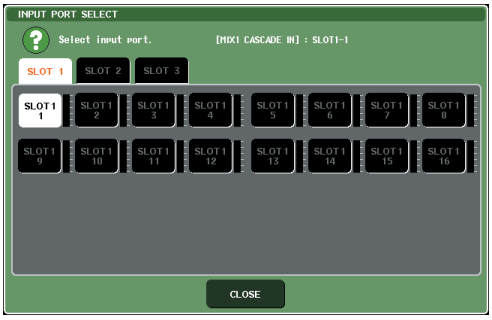
**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the SYSTEM SETUP field located in the center of the SETUP screen, press the CASCADE button to open the CASCADE popup window.**

**3 Press the CASCADE IN PATCH tab to access the CASCADE IN PATCH page.**

**4 Press the port select popup button for the bus whose port you want to assign.**

The INPUT PORT SELECT popup window will appear.




**5 Use the slot select tabs and port select buttons to select the desired slot and input ports, and press the CLOSE button.**

The port will be assigned to the bus you selected.

**6 Repeat steps 4 and 5 to assign ports to other buses.**

If desired, you can assign two or more buses to the same input port.

**7 To close the CASCADE popup window, press the "×" symbol located in the upper right.**

In this state, the bus signals of the cascade slave will be sent via the slot to the buses of the cascade master, and the combined signals of both buses will be output from the cascade master.

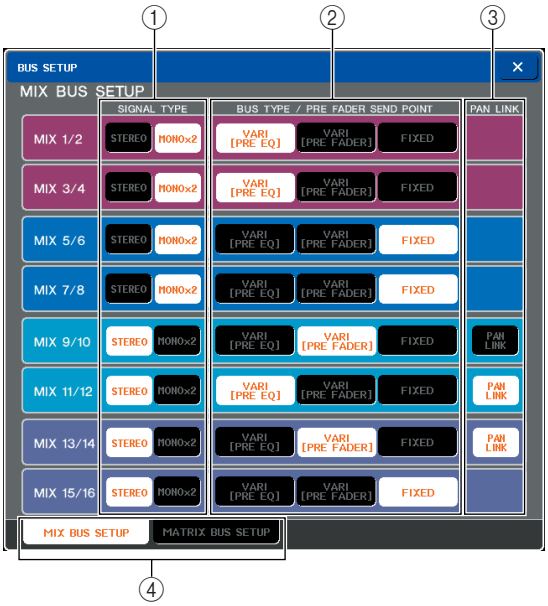
# Basic settings for MIX buses and MATRIX buses

This section explains how to change the basic settings for MIX buses and MATRIX buses, such as switching between stereo and monaural, and selecting the position from which the signal is sent from an input channel.
The settings you make in the following procedure are saved as part of the scene.

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the center right of the SETUP screen, press the BUS SETUP button to open the BUS SETUP popup window.**

In the BUS SETUP popup window you can make various settings for MIX buses and MATRIX buses.




This popup window contains the following items.

### ① SIGNAL TYPE (Signal processing method)

This selects whether two adjacent odd-numbered/even-numbered buses will be used as stereo channels whose main parameters are linked (STEREO) or as two monaural channels (MONO x2).

### ② BUS TYPE / PRE FADER SEND POINT

For two adjacent odd-numbered/even-numbered buses, this selects the position from which the signal will be sent from the input channel. For a MIX bus, you can also switch the bus type (VARI or FIXED) here.

### ③ PAN LINK

This specifies whether the position from which the signal is sent from an input channel to the stereo bus will be linked with the INPUT TO ST PAN setting.

### ④ MIX BUS SETUP/MATRIX BUS SETUP tabs

These tabs switch between the MIX bus and MATRIX bus setting screens.

**3 Use the MIX BUS SETUP/MATRIX BUS SETUP tabs to view either the MIX buses or the MATRIX buses.**

**4 Use the buttons in the SIGNAL TYPE field to specify whether each bus will function as STEREO (main parameters will be linked for two adjacent odd-numbered/even-numbered buses) or MONOx2 (use as two monaural channels).**

**5 Use the buttons of the BUS TYPE / SEND POINT field to select the position from which the signal of the input channel will be sent.**

In the case of a MIX bus, you can use this field to switch the type of bus (VARI or FIXED). The following items can be selected for each bus.

● **MIX bus**

- **VARI [PRE EQ]** ..... The send level of the MIX bus is adjustable. Choose this if you want to use the MIX bus as an external effect send or as a foldback output. The signal is sent from immediately before the input channel EQ (attenuator).
- **VARI [PRE FADER]** ..... The send level of the MIX bus is adjustable. Choose this if you want to use the MIX bus as an external effect send or as a foldback output. The signal is sent from immediately before the input channel fader.
- **FIXED** ..... The send level of the MIX bus is fixed at nominal level (0.0 dB). Choose this if you want to use the MIX bus as a group output or as a bus output for recording on a multitrack recorder. The signal is sent from immediately after the [ON] key of the input channel.

● **MATRIX bus**

- **PRE EQ**..... The signal is sent from immediately before the input channel EQ (attenuator).
- **PRE FADER**... The signal is sent from immediately before the input channel fader.

**6 As desired, turn the buttons of the PAN LINK field on/off.**

In the PAN LINK field, you can specify whether the panning of the signal routed from an input channel to the stereo bus will be linked with operation of the INPUT TO ST PAN knob (if the input channel's SIGNAL TYPE is set to STEREO and BUS TYPE is set to VARI).

- **If the PAN LINK button is on**
  If the send-destination bus is stereo, the PAN knob that appears in the location of the SEND LEVEL knob in the input channel's screens will be linked with operation of the INPUT TO ST PAN knob.
- **If the PAN LINK button is off**
  The PAN knob that appears in the location of the SEND LEVEL knob in the input channel's screens will be linked with operation of the INPUT TO ST PAN knob.

This parameter can be enabled only if the SIGNAL TYPE of the corresponding bus is STEREO (and for a MIX bus, the BUS TYPE must also be VARI).

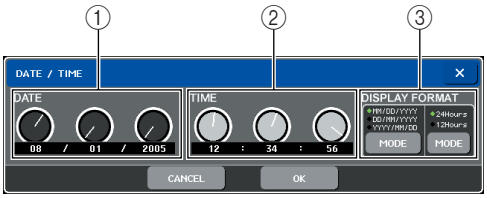
**7 To return to the SETUP screen, press the "×" symbol.**

# Setting the date and time of the internal clock

This section explains how to set the date and time of the clock built into the M7CL, and how to view the date and time.
The date and time you specify here will affect the time stamp used when saving a scene.

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 Press the DATE/TIME button located in the bottom row of the SETUP screen, to open the DATE/TIME popup window.**




The popup window includes the following items.

① **DATE**
Specifies the date of the internal clock.

② **TIME**
Specifies the time of the internal clock.

③ **DISPLAY FORMAT**
Specifies the format in which the time of the internal clock is shown.

**3 In the DISPLAY FORMAT field, press the MODE button several times to select the desired format for date and time display.**

You can select from the following display formats.

- **Date**
  MM/DD/YYYY(Month/Day/Year)
  DD/MM/YYYY(Day/Month/Year)
  YYYY/MM/DD(Year/Month/Day)
- **Time**
  24Hours (hours shown in a range of 0–23)
  12Hours (hours shown from AM 0–AM 11 and PM 0–PM 11)

**4 Use multifunction encoders 1–6 on the top panel to specify the current date and time.**

**5 When you have finished making settings, press the OK button.**

The date, time, and display format you specified will be finalized, and the popup window will close. If you press the CANCEL button or the "×" symbol instead of the OK button, your changes will be discarded and the popup window will close.

# Setting the network address

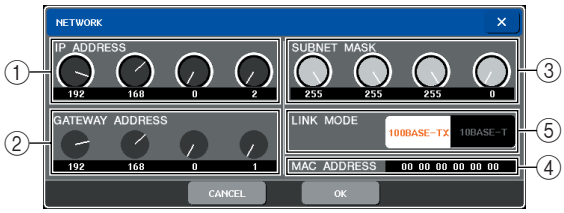
Here's how to set the network address that will be required when you use the M7CL's NETWORK connector to connect it to a Windows computer.

NOTE

*• The cue signal is sent to the same output destination as the monitor signal. Be aware that for this reason, if you turn off the Monitor function, the cue signal will no longer be sent to the connected monitor speakers. However, the cue signal will always be sent to the PHONES OUT jack.*

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the lower line of the SETUP screen, press the NETWORK button to access the NETWORK popup window.**




### ① IP ADDRESS

This is a number assigned to identify each device on the Internet or LAN (Local Area Network).

### ② GATEWAY ADDRESS

This is a number that identifies a device (gateway) that allows data of differing media or protocol to be exchanged within a network to allow communication.

### ③ SUBNET MASK

This is a number that defines the number of bits (of the IP address used within the network) that will be used as the network address that distinguishes the network.

### ④ MAC ADDRESS

This is the MAC (Machine Access Control) address specified for identifying a host within a network. This field is only for display, and cannot be edited.

### ⑤ LINK MODE

Select either 100BASE-TX (transmission speed: maximum 100 Mbps) or 10BASE-T (transmission speed: max 10 Mbps) as the specification used for communication via the NETWORK connector.

**3 As appropriate for the type of NETWORK connector on your computer, use the LINK MODE buttons to select the specification of the network to which you will be connecting.**

NOTE

*• Be aware that if the specification does not match, communication will not occur correctly.*

**4 Press the knob in the screen to select it, and use the top panel multifunction encoders to specify the address.**

If you are connecting the M7CL to your computer in a one-to-one connection, we recommend that you make the following initial settings.

**IP address**: 192.168.0.128 or similar (however, it must not conflict with the IP address of any other device on the network)

**Gateway address**: 192.168.0.1 or similar (however, it must not conflict with the IP address of any other device on the network)

**Subnet mask**: 255.255.255.0 or similar

For details on settings when connecting to a LAN, refer to the M7CL Editor installation guide.

**5 When you have finished making settings, press the OK button.**

The changes will be finalized, and the popup window will close. If you press the CANCEL button or the "×" symbol instead of the OK button, your changes will be discarded and the popup window will close.

# Specifying the brightness of the touch screen, LEDs, and lamps

Here's how to specify the brightness of the touch screen, top panel LEDs, and lamps connected to the rear panel LAMP connectors.

**1 In the function access area, press the SETUP button to access the SETUP screen.**

**2 In the BRIGHTNESS field located in the right of the bottom row in the SETUP screen, press the BANK A or BANK B button.**

You can save two different brightness settings in bank A and B, and switch between them rapidly when desired.

**3 Use multifunction encoders 6–8 to set the following parameters.**

● **SCREEN**
Adjusts the brightness of the touch screen.

● **PANEL**
Adjusts the brightness of the top panel LEDs. If the optional MBM7CL meter bridge is installed, this will also affect the LEDs of the meter bridge.

NOTE

*• If the AD8HR is connected, the brightness of the AD8HR's LEDs will also change.*

● **LAMP**
Adjusts the brightness of the lamps connected to the rear panel LAMP jacks.

**4 If desired, switch between banks A/B and make settings for the other bank in the same way.**

Now you can switch between the BANK A and BANK B buttons of the BRIGHTNESS field to switch the brightness of the touch screen, LCD, and lamps in a single operation. You can also assign the BRIGHTNESS parameter to a user-defined key, and press that key to switch between banks A and B.

# Initializing the M7CL's internal memory

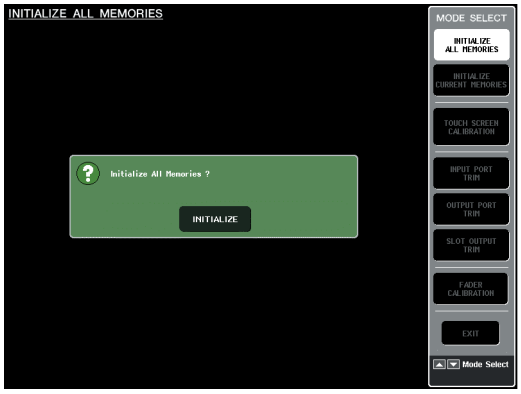
If an error occurs in the M7CL's internal memory, or if you have forgotten the password, you can use the following procedure to initialize the internal memory.

**⚠ CAUTION**

- ***The entire contents of memory will be lost if you initialize the internal memory. Proceed with the following operation only if you are very sure you want to do this.***

**1 While holding down the SCENE MEMORY [STORE] key of the panel, turn on the power.**

After the opening screen, the following startup menu screen will appear.




**2 Press one of the following buttons according to the type of initialization you want to perform.**

- **INITIALIZE ALL MEMORIES**

  .....The entire memory including scene memories and libraries will be returned to their factory-set condition.

- **INITIALIZE CURRENT MEMORIES**

  .....The contents of memory except for scene memories and libraries will be returned to its factory-set condition.

NOTE

- *If the backup battery voltage is low, or if an error occurs in the internal memory, a warning dialog box will appear, and then the initialization menu will appear. If the warning dialog box appears, and you press the EXIT button to start up in normal operating mode, Yamaha will not guarantee that the unit will operate correctly.*

**3 A dialog box will ask you to confirm the initialization. Press the INITIALIZE button.**

A dialog box will ask you to reconfirm the operation.

**4 Press the OK button in the confirmation dialog box.**

Initialization will begin.

NOTE

- *Do not press any button until initialization has been completed.*

**5 A message indicates that the initialization process is complete. Press the EXIT button.**

The M7CL will start up in normal operating mode.

HINT

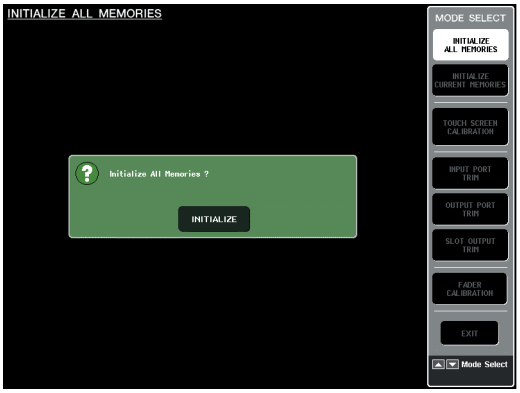
- *Alternatively, you can continue by selecting a different menu instead of pressing the EXIT button.*

# Adjusting the detection point of the touch screen (Calibration function)

Here's how to correctly align the positions of the LCD display and the touch screen.

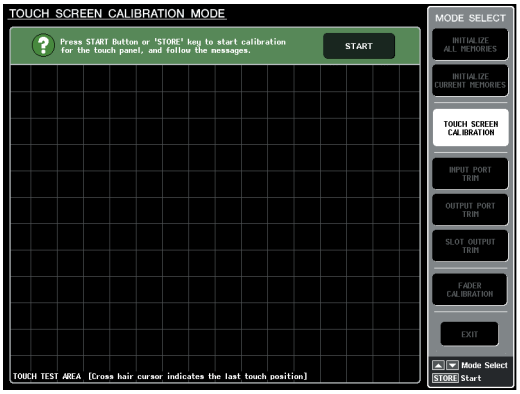
**1 While holding down the SCENE MEMORY [STORE] key of the panel, turn on the power.**

After the opening screen, the following startup menu screen will appear.




**2 Press the TOUCH SCREEN CALIBRATION button.**

The TOUCH SCREEN CALIBRATION MODE screen will appear, allowing you to adjust the touch screen.


TOUCH SCREEN CALIBRATION MODE
MODE SELECT
Press START Button or 'STORE' key to start calibration for the touch panel, and follow the messages.
START
INITIALIZE ALL MEMORIES
INITIALIZE CURRENT MEMORIES
TOUCH SCREEN CALIBRATION
INPUT PORT TRIM
OUTPUT PORT TRIM
SLOT OUTPUT TRIM
FADER CALIBRATION
EXIT
Mode Select
STORE Start
TOUCH TEST AREA (Cross hair cursor indicates the last touch position)

HINT

- *When you cannot start calibration by touching, press the SCENE MEMORY[▲][▼] key to select TOUCH SCREEN CALIBRATION button and then press the [STORE] key to start.*

**3 Press the START button.**

A confirmation dialog box will appear.

**4 Press the OK button in the dialog box.**

A cross-shaped cursor will appear in the screen.

**5 This cursor will appear a total of three times. Press each location at which it appears.**

NOTE

- *In order to set the detection points accurately, press the cross-shaped cursor from the position and posture in which you normally operate the unit.*

**6 Press the EXIT button.**

The M7CL will start up in normal operating mode.

HINT

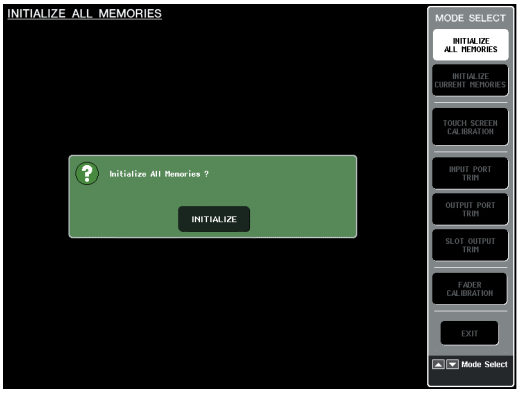
- *Alternatively, you can continue by selecting a different menu instead of pressing the EXIT button.*

# Adjusting the faders (Calibration function)

Depending on the environment in which you use the M7CL, discrepancies may occur in the motion of the motor faders. You can use the Calibration function to correct these discrepancies.

**1 While holding down the SCENE MEMORY [STORE] key of the panel, turn on the power.**

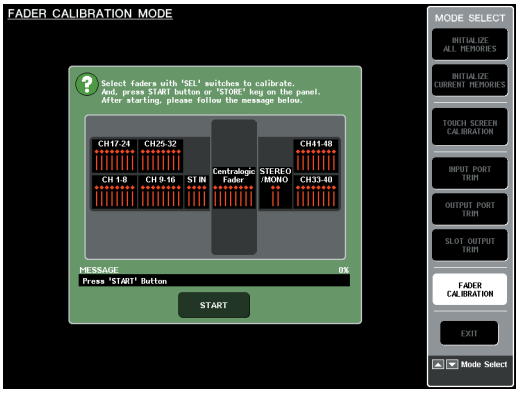
After the opening screen, the following startup menu screen will appear.




**2 Press the FADER CALIBRATION button.**

The FADER CALIBRATION MODE screen will appear, where you can adjust the faders.

Calibration will be performed semi-automatically for the specified faders (INPUT, ST IN, Centralogic faders, STEREO/MONO). This window will also appear if a problem is detected in the fader settings while the M7CL is running.




**3 Press a [SEL] key to specify the faders that you want to calibrate.**

Faders for which a problem was detected at start-up will already be selected.

**4 Press the START button.**

A confirmation dialog box will appear.

**5 Press the OK button in the dialog box.**

**6 Each of the specified faders will move to the target positions in the following sequence. Manually move the fader to the correct positions.**

① **-∞ (all the way down)**
② **-20 dB**
③ **0 dB**
④ **+10 dB (all the way up)**

**7 When you've adjusted the fader position, press the [NEXT] button.**

The process will proceed to the next fader position.

**8 Repeat steps 6–7 to adjust the faders for positions (①) through (④).**

**9 When calibration has been completed and the RESTART button has not appeared, press the APPLY button.**

The calibration settings will be saved in internal memory.

If the RESTART button appears, calibration has failed. Press the RESTART button to execute calibration once again.

**10 Press the EXIT button.**

The M7CL will start up in normal operating mode.

HINT

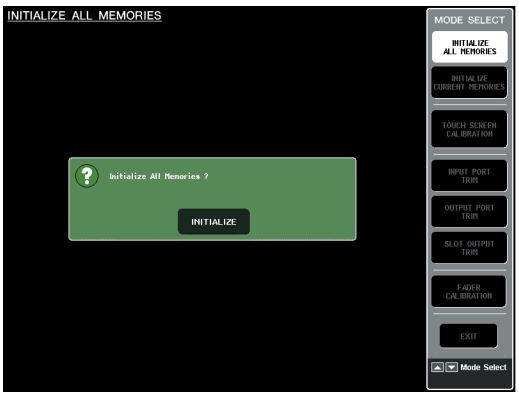
- *Alternatively, you can continue by selecting a different menu instead of pressing the EXIT button.*

# Adjusting the input/output gain (Calibration function)

If necessary, you can make fine adjustments to the input/output gain.

## 1 While holding down the SCENE MEMORY [STORE] key of the panel, turn on the power.

After the opening screen, the following startup menu screen will appear.



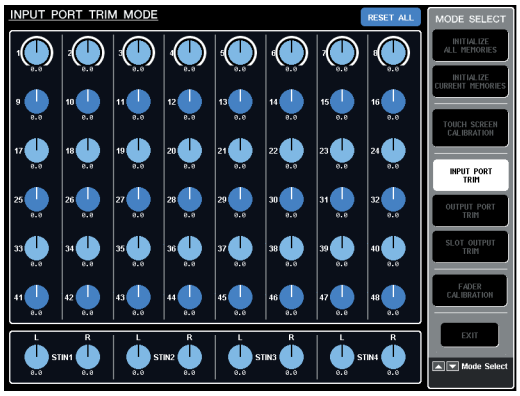

## 2 In the MODE SELECT field, select the item you want to adjust, and press the button.

The corresponding setting screen will appear.

You can make the following three gain adjustments for analog input/output.

- **INPUT PORT TRIM (Fine adjustment of the analog input gain)**

  ..... Access the INPUT PORT TRIM window, and make fine adjustments to the gain of the specified analog input port in 0.1 dB steps.




- **OUTPUT PORT TRIM (Fine adjustment of the output ports)**

  ..... Access the OUTPUT PORT TRIM window, and make fine adjustments to the gain of the specified analog output port in 0.01 dB steps.

- **SLOT OUTPUT TRIM (Fine adjustment of the output ports)**

  ..... Access the SLOT OUTPUT TRIM window, and make fine adjustments to the gain of the output ports of the specified slot in 0.01 dB steps.

## 3 Press a knob to select it, and use the multi-function encoders to adjust the value.

If you press the RESET ALL button provided in each screen, all settings in the screen will be reset to 0 dB.

The factory settings are also 0 dB.

## 4 Press the EXIT button.

The M7CL will start up in normal operating mode.

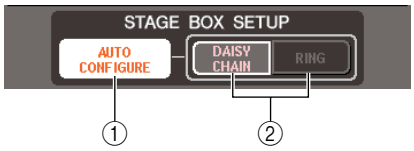
HINT

- *Alternatively, you can continue by selecting a different menu instead of pressing the EXIT button.*

# Connecting SB168-ES units to the M7CL-48ES using the Stage Box Setup function

When you connect one M7CL-48ES to up to three SB168-ES units, using the Stage Box Setup function enables you to set up the EtherSound patches and word clock without using AVS-ESMonitor.
For more information on setting up patches, refer to “Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function” (→ p. 43).
You can use the Stage Box Setup function in the EXT-ES HA field in the VIRTUAL RACK window. Use one of the following two methods to display the EXT-ES HA field:

- Press the SETUP button, then press the STAGE BOX SETUP button in the SETUP screen.
- Press the RACK button, press the EXT-ES HA tab in the VIRTUAL RACK window, then press the SB168-ES button in the VIEW field.




### ① AUTO CONFIGURE button

This button switches the automatic configuration of EtherSound patches on and off. When this button is switched on, the master clock will be set to INT 48kHz (in a daisy chain connection) or to EtherSound (48kHz) (in a ring connection).
If you want to change the EtherSound setting in AVS-ESMonitor or if you want the M7CL-48ES or SB168-ES to start up with the settings made in AVS-ESMonitor, switch this button off.

NOTE

*• The word clock setting cannot be changed if the AUTO CONFIGURE button is turned ON.*

### ② DAISY CHAIN / RING buttons

Use these buttons to switch to DAISY CHAIN (daisy chain connection) or RING (ring connection) setup, according to the connection with the SB168-ES.
For more information on daisy chain and ring connections, please refer to “Connecting SB168-ES units to the M7CL-48ES using the STAGE BOX SETUP function” (→ p. 43).

## Changing settings to suit the connection

You can connect the M7CL-48ES and SB168-ES units in a daisy chain or ring connection. If the connection type and the Stage Box Setup data do not match, the patch and word clock settings will not work properly.

NOTE

*• Also, be sure to change the SB168-ES dip switches according to the connection type. (→ p. 43)*

**1 Press the AUTO CONFIGURE button to turn it off (the button indicator will turn off).**

**2 Press the DAISY CHAIN button for a daisy chain connection. Press the RING button for a ring connection.**

**3 Press the AUTO CONFIGURE button to turn it on (the button indicator will light).**

A setup confirmation dialog box is displayed.

**4 Confirm that the setting is correct, then press the OK button.**

# Changing the EtherSound settings from AVS-ESMonitor (M7CL-48ES)

Follow the steps below to change the EtherSound settings from AVS-ES Monitor. (For example, when you want to connect an EtherSound device other than the SB168-ES units.)

**1 Set SB168-ES dip switches 5–8 to OFF (up).**

**2 Press the AUTO CONFIGURE button to turn it off (the button indicator will turn off).**

**3 Connect a computer (with AVS-ESMonitor installed) to the [3rd] connector on the M7CL-48ES.**

**4 Start AVS-ESMonitor.**

**5 Select the desired EtherSound device (such as an M7CL-48ES, SB168-ES, etc.) for which you want to modify the settings from AVS-ESMonitor, then open the Control page.**

**6 Remove the check from Lock Inputs and Lock Outputs in the Lock Routing section on the Control page.**

**7 Modify the settings from AVS-ESMonitor as necessary.**

**8 If necessary, execute "Write to Non Volatile Memory" to write the modified data to Non Volatile Memory (non-volatile memory of the EtherSound module).**

NOTE

- *If the AUTO CONFIGURE button has been turned on, the Stage Box Setup function of the M7CL-48ES will take priority. Thus the setting data written to non-volatile memory will not affect either the M7CL-48ES or SB168-ES. If you want to use the setting data that was written to non-volatile memory, leave the AUTO CONFIGURE button off (the button indicator is turned off).*
- *If you turn on the power to the SB168-ES while dip switches 5–8 are set to OFF (up), settings written to non-volatile memory will be used at the time of startup.*
- *By viewing the "Setting from DIP Switch 5–8" section of the SB168-ES Control page in AVS-ESMonitor, you can check the M7CL-48ES's connection type as specified via SB168-ES dip switches 5–8. In the same way, you can check the Stage Box Setup function settings of the M7CL48ES by viewing the AUTO CONFIGURE section of the M7CL-48ES Control page. You can modify these settings temporarily from AVS-ESMonitor.*

# Appendices

## EQ Library List

| # | Title | | Parameter | | | |
|---|---|---|---|---|---|---|
| | | | LOW | L-MID | H-MID | HIGH |
| 01 | Bass Drum 1 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +3.5 dB | –3.5 dB | 0.0 dB | +4.0 dB |
| | | F | 100 Hz | 265 Hz | 1.06 kHz | 5.30 kHz |
| | | Q | 1.25 | 10.0 | 0.90 | — |
| 02 | Bass Drum 2 | | PEAKING | PEAKING | PEAKING | LPF |
| | | G | +8.0 dB | –7.0 dB | +6.0 dB | ON |
| | | F | 80.0 Hz | 400 Hz | 2.50 kHz | 12.5 kHz |
| | | Q | 1.4 | 4.5 | 2.2 | — |
| 03 | Snare Drum 1 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | –0.5 dB | 0.0 dB | +3.0 dB | +4.5 dB |
| | | F | 132 Hz | 1.00 kHz | 3.15 kHz | 5.00 kHz |
| | | Q | 1.25 | 4.5 | 0.11 | — |
| 04 | Snare Drum 2 | | L.SHELF | PEAKING | PEAKING | PEAKING |
| | | G | +1.5 dB | –8.5 dB | +2.5 dB | +4.0 dB |
| | | F | 180 Hz | 335 Hz | 2.36 kHz | 4.00 kHz |
| | | Q | — | 10.0 | 0.70 | 0.10 |
| 05 | Tom-tom 1 | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | +2.0 dB | –7.5 dB | +2.0 dB | +1.0 dB |
| | | F | 212 Hz | 670 Hz | 4.50 kHz | 6.30 kHz |
| | | Q | 1.4 | 10.0 | 1.25 | 0.28 |
| 06 | Cymbal | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –2.0 dB | 0.0 dB | 0.0 dB | +3.0 dB |
| | | F | 106 Hz | 425 Hz | 1.06 kHz | 13.2 kHz |
| | | Q | — | 8.0 | 0.90 | — |
| 07 | High Hat | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –4.0 dB | –2.5 dB | +1.0 dB | +0.5 dB |
| | | F | 95.0 Hz | 425 Hz | 2.80 kHz | 7.50 kHz |
| | | Q | — | 0.50 | 1.0 | — |
| 08 | Percussion | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –4.5 dB | 0.0 dB | +2.0 dB | 0.0 dB |
| | | F | 100 Hz | 400 Hz | 2.80 kHz | 17.0 kHz |
| | | Q | — | 4.5 | 0.56 | — |
| 09 | E. Bass 1 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –7.5 dB | +4.5 dB | +2.5 dB | 0.0 dB |
| | | F | 35.5 Hz | 112 Hz | 2.00 kHz | 4.00 kHz |
| | | Q | — | 5.0 | 4.5 | — |
| 10 | E. Bass 2 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +3.0 dB | 0.0 dB | +2.5 dB | +0.5 dB |
| | | F | 112 Hz | 112 Hz | 2.24 kHz | 4.00 kHz |
| | | Q | 0.10 | 5.0 | 6.3 | — |
| 11 | Syn. Bass 1 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +3.5 dB | +8.5 dB | 0.0 dB | 0.0 dB |
| | | F | 85.0 Hz | 950 Hz | 4.00 kHz | 12.5 kHz |
| | | Q | 0.10 | 8.0 | 4.5 | — |
| 12 | Syn. Bass 2 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +2.5 dB | 0.0 dB | +1.5 dB | 0.0 dB |
| | | F | 125 Hz | 180 Hz | 1.12 kHz | 12.5 kHz |
| | | Q | 1.6 | 8.0 | 2.2 | — |

| # | Title | | Parameter | | | |
|---|---|---|---|---|---|---|
| | | | LOW | L-MID | H-MID | HIGH |
| 13 | Piano 1 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –6.0 dB | 0.0 dB | +2.0 dB | +4.0 dB |
| | | F | 95.0 Hz | 950 Hz | 3.15 kHz | 7.50 kHz |
| | | Q | — | 8.0 | 0.90 | — |
| 14 | Piano 2 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +3.5 dB | –8.5 dB | +1.5 dB | +3.0 dB |
| | | F | 224 Hz | 600 Hz | 3.15 kHz | 5.30 kHz |
| | | Q | 5.6 | 10.0 | 0.70 | — |
| 15 | E. G. Clean | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +2.0 dB | –5.5 dB | +0.5 dB | +2.5 dB |
| | | F | 265 Hz | 400 Hz | 1.32 kHz | 4.50 kHz |
| | | Q | 0.18 | 10.0 | 6.3 | — |
| 16 | E. G. Crunch 1 | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | +4.5 dB | 0.0 dB | +4.0 dB | +2.0 dB |
| | | F | 140 Hz | 1.00 kHz | 1.90 kHz | 5.60 kHz |
| | | Q | 8.0 | 4.5 | 0.63 | 9.0 |
| 17 | E. G. Crunch 2 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +2.5 dB | +1.5 dB | +2.5 dB | 0.0 dB |
| | | F | 125 Hz | 450 Hz | 3.35 kHz | 19.0 kHz |
| | | Q | 8.0 | 0.40 | 0.16 | — |
| 18 | E. G. Dist. 1 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | +5.0 dB | 0.0 dB | +3.5 dB | 0.0 dB |
| | | F | 355 Hz | 950 Hz | 3.35 kHz | 12.5 kHz |
| | | Q | — | 9.0 | 10.0 | — |
| 19 | E. G. Dist. 2 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | +6.0 dB | –8.5 dB | +4.5 dB | +4.0 dB |
| | | F | 315 Hz | 1.06 kHz | 4.25 kHz | 12.5 kHz |
| | | Q | — | 10.0 | 4.0 | — |
| 20 | A. G. Stroke 1 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | –2.0 dB | 0.0 dB | +1.0 dB | +4.0 dB |
| | | F | 106 Hz | 1.00 kHz | 1.90 kHz | 5.30 kHz |
| | | Q | 0.90 | 4.5 | 3.5 | — |
| 21 | A. G. Stroke 2 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –3.5 dB | –2.0 dB | 0.0 dB | +2.0 dB |
| | | F | 300 Hz | 750 Hz | 2.00 kHz | 3.55 kHz |
| | | Q | — | 9.0 | 4.5 | — |
| 22 | A. G. Arpeg. 1 | | L.SHELF | PEAKING | PEAKING | PEAKING |
| | | G | –0.5 dB | 0.0 dB | 0.0 dB | +2.0 dB |
| | | F | 224 Hz | 1.00 kHz | 4.00 kHz | 6.70 kHz |
| | | Q | — | 4.5 | 4.5 | 0.125 |
| 23 | A. G. Arpeg. 2 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | 0.0 dB | –5.5 dB | 0.0 dB | +4.0 dB |
| | | F | 180 Hz | 355 Hz | 4.00 kHz | 4.25 kHz |
| | | Q | — | 7.0 | 4.5 | — |
| 24 | Brass Sec. | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | –2.0 dB | –1.0 dB | +1.5 dB | +3.0 dB |
| | | F | 90.0 Hz | 850 Hz | 2.12 kHz | 4.50 kHz |
| | | Q | 2.8 | 2.0 | 0.70 | 7.0 |

| # | Title | | Parameter | | | |
|---|---|---|---|---|---|---|
| | | | LOW | L-MID | H-MID | HIGH |
| 25 | Male Vocal 1 | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | –0.5 dB | 0.0 dB | +2.0 dB | +3.5 dB |
| | | F | 190 Hz | 1.00 kHz | 2.00 kHz | 6.70 kHz |
| | | Q | 0.11 | 4.5 | 0.56 | 0.11 |
| 26 | Male Vocal 2 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +2.0 dB | –5.0 dB | –2.5 dB | +4.0 dB |
| | | F | 170 Hz | 236 Hz | 2.65 kHz | 6.70 kHz |
| | | Q | 0.11 | 10.0 | 5.6 | — |
| 27 | Female Vo. 1 | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | –1.0 dB | +1.0 dB | +1.5 dB | +2.0 dB |
| | | F | 118 Hz | 400 Hz | 2.65 kHz | 6.00 kHz |
| | | Q | 0.18 | 0.45 | 0.56 | 0.14 |
| 28 | Female Vo. 2 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –7.0 dB | +1.5 dB | +1.5 dB | +2.5 dB |
| | | F | 112 Hz | 335 Hz | 2.00 kHz | 6.70 kHz |
| | | Q | — | 0.16 | 0.20 | — |
| 29 | Chorus & Harmo | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | –2.0 dB | –1.0 dB | +1.5 dB | +3.0 dB |
| | | F | 90.0 Hz | 850 Hz | 2.12 kHz | 4.50 kHz |
| | | Q | 2.8 | 2.0 | 0.70 | 7.0 |
| 30 | Total EQ 1 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | –0.5 dB | 0.0 dB | +3.0 dB | +6.5 dB |
| | | F | 95.0 Hz | 950 Hz | 2.12 kHz | 16.0 kHz |
| | | Q | 7.0 | 2.2 | 5.6 | — |
| 31 | Total EQ 2 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +4.0 dB | +1.5 dB | +2.0 dB | +6.0 dB |
| | | F | 95.0 Hz | 750 Hz | 1.80 kHz | 18.0 kHz |
| | | Q | 7.0 | 2.8 | 5.6 | — |
| 32 | Total EQ 3 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | +1.5 dB | +0.5 dB | +2.0 dB | +4.0 dB |
| | | F | 67.0 Hz | 850 Hz | 1.90 kHz | 15.0 kHz |
| | | Q | — | 0.28 | 0.70 | — |

| # | Title | | Parameter | | | |
|---|---|---|---|---|---|---|
| | | | LOW | L-MID | H-MID | HIGH |
| 33 | Bass Drum 3 | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | +3.5 dB | –10.0 dB | +3.5 dB | 0.0 dB |
| | | F | 118 Hz | 315 Hz | 4.25 kHz | 20.0 kHz |
| | | Q | 2.0 | 10.0 | 0.40 | 0.40 |
| 34 | Snare Drum 3 | | L.SHELF | PEAKING | PEAKING | PEAKING |
| | | G | 0.0 dB | +2.0 dB | +3.5 dB | 0.0 dB |
| | | F | 224 Hz | 560 Hz | 4.25 kHz | 4.00 kHz |
| | | Q | — | 4.5 | 2.8 | 0.10 |
| 35 | Tom-tom 2 | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –9.0 dB | +1.5 dB | +2.0 dB | 0.0 dB |
| | | F | 90.0 Hz | 212 Hz | 5.30 kHz | 17.0 kHz |
| | | Q | — | 4.5 | 1.25 | — |
| 36 | Piano 3 | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | +4.5 dB | –13.0 dB | +4.5 dB | +2.5 dB |
| | | F | 100 Hz | 475 Hz | 2.36 kHz | 10.0 kHz |
| | | Q | 8.0 | 10.0 | 9.0 | — |
| 37 | Piano Low | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | –5.5 dB | +1.5 dB | +6.0 dB | 0.0 dB |
| | | F | 190 Hz | 400 Hz | 6.70 kHz | 12.5 kHz |
| | | Q | 10.0 | 6.3 | 2.2 | — |
| 38 | Piano High | | PEAKING | PEAKING | PEAKING | PEAKING |
| | | G | –5.5 dB | +1.5 dB | +5.0 dB | +3.0 dB |
| | | F | 190 Hz | 400 Hz | 6.70 kHz | 5.60 kHz |
| | | Q | 10.0 | 6.3 | 2.2 | 0.10 |
| 39 | Fine-EQ Cass | | L.SHELF | PEAKING | PEAKING | H.SHELF |
| | | G | –1.5 dB | 0.0 dB | +1.0 dB | +3.0 dB |
| | | F | 75.0 Hz | 1.00 kHz | 4.00 kHz | 12.5 kHz |
| | | Q | — | 4.5 | 1.8 | — |
| 40 | Narrator | | PEAKING | PEAKING | PEAKING | H.SHELF |
| | | G | –4.0 dB | –1.0 dB | +2.0 dB | 0.0 dB |
| | | F | 106 Hz | 710 Hz | 2.50 kHz | 10.0 kHz |
| | | Q | 4.0 | 7.0 | 0.63 | — |

# DYNAMICS Library List

| # | Title | Type | Parameter | Value |
|---|---|---|---|---|
| 1 | Gate | GATE | Threshold (dB) | –26 |
| | | | Range (dB) | –56 |
| | | | Attack (ms) | 0 |
| | | | Hold (ms) | 2.56 |
| | | | Decay (ms) | 331 |
| 2 | Ducking | DUCKING | Threshold (dB) | –19 |
| | | | Range (dB) | –22 |
| | | | Attack (ms) | 93 |
| | | | Hold (ms) | 1.20 S |
| | | | Decay (ms) | 6.32 S |
| 3 | A. Dr. BD | GATE | Threshold (dB) | –11 |
| | | | Range (dB) | –53 |
| | | | Attack (ms) | 0 |
| | | | Hold (ms) | 1.93 |
| | | | Decay (ms) | 400 |
| 4 | A. Dr. SN | GATE | Threshold (dB) | –8 |
| | | | Range (dB) | –23 |
| | | | Attack (ms) | 1 |
| | | | Hold (ms) | 0.63 |
| | | | Decay (ms) | 238 |

| # | Title | Type | Parameter | Value |
|---|---|---|---|---|
| 5 | De-Esser | DE-ESSER | Threshold (dB) | –8 |
| | | | Frequency (kHz) | 2.00 |
| 6 | Comp | COMPRESSOR | Threshold (dB) | –8 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 30 |
| | | | Out gain (dB) | 0.0 |
| | | | Knee | 2 |
| | | | Release (ms) | 250 |
| 7 | Expand | EXPANDER | Threshold (dB) | –23 |
| | | | Ratio ( :1) | 1.7 |
| | | | Attack (ms) | 1 |
| | | | Out gain (dB) | 3.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 70 |
| 8 | Compander (H) | COMPANDER-H | Threshold (dB) | –10 |
| | | | Ratio ( :1) | 3.5 |
| | | | Attack (ms) | 1 |
| | | | Out gain (dB) | 0.0 |
| | | | Width (dB) | 6 |
| | | | Release (ms) | 250 |

| # | Title | Type | Parameter | Value |
|---|---|---|---|---|
| 9 | **Compander (S)** | COMPANDER-S | Threshold (dB) | –8 |
| | | | Ratio ( :1) | 4 |
| | | | Attack (ms) | 25 |
| | | | Out gain (dB) | 0.0 |
| | | | Width (dB) | 24 |
| | | | Release (ms) | 180 |
| 10 | **A. Dr. BD** | COMPRESSOR | Threshold (dB) | –24 |
| | | | Ratio ( :1) | 3 |
| | | | Attack (ms) | 9 |
| | | | Out gain (dB) | 5.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 58 |
| 11 | **A. Dr. BD** | COMPANDER-H | Threshold (dB) | –11 |
| | | | Ratio ( :1) | 3.5 |
| | | | Attack (ms) | 1 |
| | | | Out gain (dB) | –1.5 |
| | | | Width (dB) | 7 |
| | | | Release (ms) | 192 |
| 12 | **A. Dr. SN** | COMPRESSOR | Threshold (dB) | –17 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 8 |
| | | | Out gain (dB) | 3.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 12 |
| 13 | **A. Dr. SN** | EXPANDER | Threshold (dB) | –23 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 0 |
| | | | Out gain (dB) | 0.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 151 |
| 14 | **A. Dr. SN** | COMPANDER-S | Threshold (dB) | –8 |
| | | | Ratio ( :1) | 1.7 |
| | | | Attack (ms) | 11 |
| | | | Out gain (dB) | 0.0 |
| | | | Width (dB) | 10 |
| | | | Release (ms) | 128 |
| 15 | **A. Dr. Tom** | EXPANDER | Threshold (dB) | –20 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 2 |
| | | | Out gain (dB) | 5.0 |
| | | | Knee | 2 |
| | | | Release (ms) | 749 |
| 16 | **A. Dr. OverTop** | COMPANDER-S | Threshold (dB) | –24 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 38 |
| | | | Out gain (dB) | –3.5 |
| | | | Width (dB) | 54 |
| | | | Release (ms) | 842 |
| 17 | **E. B. Finger** | COMPRESSOR | Threshold (dB) | –12 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 15 |
| | | | Out gain (dB) | 4.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 470 |
| 18 | **E. B. Slap** | COMPRESSOR | Threshold (dB) | –12 |
| | | | Ratio ( :1) | 1.7 |
| | | | Attack (ms) | 6 |
| | | | Out gain (dB) | 4.0 |
| | | | Knee | hard |
| | | | Release (ms) | 133 |

| # | Title | Type | Parameter | Value |
|---|---|---|---|---|
| 19 | **Syn. Bass** | COMPRESSOR | Threshold (dB) | –10 |
| | | | Ratio ( :1) | 3.5 |
| | | | Attack (ms) | 9 |
| | | | Out gain (dB) | 3.0 |
| | | | Knee | hard |
| | | | Release (ms) | 250 |
| 20 | **Piano1** | COMPRESSOR | Threshold (dB) | –9 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 17 |
| | | | Out gain (dB) | 1.0 |
| | | | Knee | hard |
| | | | Release (ms) | 238 |
| 21 | **Piano2** | COMPRESSOR | Threshold (dB) | –18 |
| | | | Ratio ( :1) | 3.5 |
| | | | Attack (ms) | 7 |
| | | | Out gain (dB) | 6.0 |
| | | | Knee | 2 |
| | | | Release (ms) | 174 |
| 22 | **E. Guitar** | COMPRESSOR | Threshold (dB) | –8 |
| | | | Ratio ( :1) | 3.5 |
| | | | Attack (ms) | 7 |
| | | | Out gain (dB) | 2.5 |
| | | | Knee | 4 |
| | | | Release (ms) | 261 |
| 23 | **A. Guitar** | COMPRESSOR | Threshold (dB) | –10 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 5 |
| | | | Out gain (dB) | 1.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 238 |
| 24 | **Strings1** | COMPRESSOR | Threshold (dB) | –11 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 33 |
| | | | Out gain (dB) | 1.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 749 |
| 25 | **Strings2** | COMPRESSOR | Threshold (dB) | –12 |
| | | | Ratio ( :1) | 1.5 |
| | | | Attack (ms) | 93 |
| | | | Out gain (dB) | 1.5 |
| | | | Knee | 4 |
| | | | Release (ms) | 1.35 S |
| 26 | **Strings3** | COMPRESSOR | Threshold (dB) | –17 |
| | | | Ratio ( :1) | 1.5 |
| | | | Attack (ms) | 76 |
| | | | Out gain (dB) | 2.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 186 |
| 27 | **BrassSection** | COMPRESSOR | Threshold (dB) | –18 |
| | | | Ratio ( :1) | 1.7 |
| | | | Attack (ms) | 18 |
| | | | Out gain (dB) | 4.0 |
| | | | Knee | 1 |
| | | | Release (ms) | 226 |
| 28 | **Syn. Pad** | COMPRESSOR | Threshold (dB) | –13 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 58 |
| | | | Out gain (dB) | 2.0 |
| | | | Knee | 1 |
| | | | Release (ms) | 238 |

| # | Title | Type | Parameter | Value |
|---|---|---|---|---|
| 29 | SamplingPerc | COMPANDER-S | Threshold (dB) | –18 |
| | | | Ratio ( :1) | 1.7 |
| | | | Attack (ms) | 8 |
| | | | Out gain (dB) | –2.5 |
| | | | Width (dB) | 18 |
| | | | Release (ms) | 238 |
| 30 | Sampling BD | COMPRESSOR | Threshold (dB) | –14 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 2 |
| | | | Out gain (dB) | 3.5 |
| | | | Knee | 4 |
| | | | Release (ms) | 35 |
| 31 | Sampling SN | COMPRESSOR | Threshold (dB) | –18 |
| | | | Ratio ( :1) | 4 |
| | | | Attack (ms) | 8 |
| | | | Out gain (dB) | 8.0 |
| | | | Knee | hard |
| | | | Release (ms) | 354 |
| 32 | Hip Comp | COMPANDER-S | Threshold (dB) | –23 |
| | | | Ratio ( :1) | 20 |
| | | | Attack (ms) | 15 |
| | | | Out gain (dB) | 0.0 |
| | | | Width (dB) | 15 |
| | | | Release (ms) | 163 |
| 33 | Solo Vocal1 | COMPRESSOR | Threshold (dB) | –20 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 31 |
| | | | Out gain (dB) | 2.0 |
| | | | Knee | 1 |
| | | | Release (ms) | 342 |
| 34 | Solo Vocal2 | COMPRESSOR | Threshold (dB) | –8 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 26 |
| | | | Out gain (dB) | 1.5 |
| | | | Knee | 3 |
| | | | Release (ms) | 331 |
| 35 | Chorus | COMPRESSOR | Threshold (dB) | –9 |
| | | | Ratio ( :1) | 1.7 |
| | | | Attack (ms) | 39 |
| | | | Out gain (dB) | 2.5 |
| | | | Knee | 2 |
| | | | Release (ms) | 226 |
| 36 | Click Erase | EXPANDER | Threshold (dB) | –33 |
| | | | Ratio ( :1) | 2 |
| | | | Attack (ms) | 1 |
| | | | Out gain (dB) | 2.0 |
| | | | Knee | 2 |
| | | | Release (ms) | 284 |
| 37 | Announcer | COMPANDER-H | Threshold (dB) | –14 |
| | | | Ratio ( :1) | 2.5 |
| | | | Attack (ms) | 1 |
| | | | Out gain (dB) | –2.5 |
| | | | Width (dB) | 18 |
| | | | Release (ms) | 180 |
| 38 | Limiter1 | COMPANDER-S | Threshold (dB) | –9 |
| | | | Ratio ( :1) | 3 |
| | | | Attack (ms) | 20 |
| | | | Out gain (dB) | –3.0 |
| | | | Width (dB) | 90 |
| | | | Release (ms) | 3.90 s |

| # | Title | Type | Parameter | Value |
|---|---|---|---|---|
| 39 | Limiter2 | COMPRESSOR | Threshold (dB) | 0 |
| | | | Ratio ( :1) | ∞ |
| | | | Attack (ms) | 0 |
| | | | Out gain (dB) | 0.0 |
| | | | Knee | hard |
| | | | Release (ms) | 319 |
| 40 | Total Comp1 | COMPRESSOR | Threshold (dB) | –18 |
| | | | Ratio ( :1) | 3.5 |
| | | | Attack (ms) | 94 |
| | | | Out gain (dB) | 2.5 |
| | | | Knee | hard |
| | | | Release (ms) | 447 |
| 41 | Total Comp2 | COMPRESSOR | Threshold (dB) | –16 |
| | | | Ratio ( :1) | 6 |
| | | | Attack (ms) | 11 |
| | | | Out gain (dB) | 6.0 |
| | | | Knee | 1 |
| | | | Release (ms) | 180 |

* At fs=44.1 kHz

# Dynamics Parameters

Input channels provide DYNAMICS section 1 and DYNAMICS section 2. Output channels provide DYNAMICS section 1.

An input channel's DYNAMICS section 1 provides the following four types:
GATE, DUCKING, COMPRESSOR, and EXPANDER.

An input channel's DYNAMICS section 2 provides the following four types:
COMPRESSOR, COMPANDER-H (Compander Hard), COMPANDER-S (Compander Soft), and DE-ESSER.

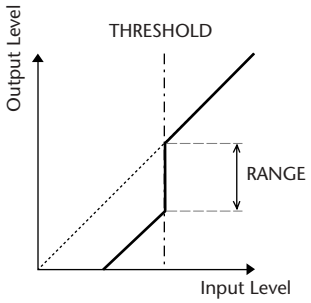
An output channel's DYNAMICS section 1 provides the following four types:
COMPRESSOR, EXPANDER, COMPANDER-H (Compander Hard), and COMPANDER-S (Compander Soft).

## GATE

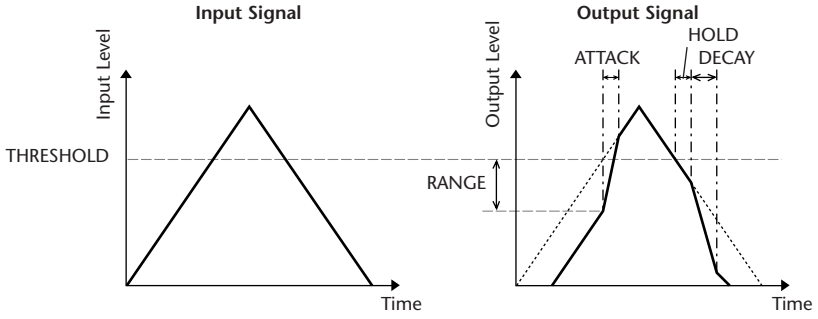
A gate attenuates signals below a set THRESHOLD level by a specified amount (RANGE).

| Parameter | Range | Description |
|---|---|---|
| **THRESHOLD (dB)** | –72 to 0 (73 points) | This determines the level at which the gate effect is applied. |
| **RANGE (dB)** | –∞, –69 to 0 (71 points) | This determines the amount of attenuation when the gate closes. |
| **ATTACK (ms)** | 0–120 (121 points) | This determines how fast the gate opens when the signal exceeds the threshold level. |
| **HOLD (ms)** | 44.1kHz: 0.02 ms – 2.13 sec<br>48kHz: 0.02 ms – 1.96 sec (160 points) | This determines how long the gate stays open once the trigger signal has fallen below the threshold. |
| **DECAY (ms)** | 44.1kHz: 6 ms – 46.0 sec<br>48kHz: 5 ms – 42.3 sec (160 points) | This determines how fast the gate closes once the hold time has expired. The value is expressed as the duration required for the level to change by 6 dB. |

• **I/O Characteristics**




• **Time Series Analysis**

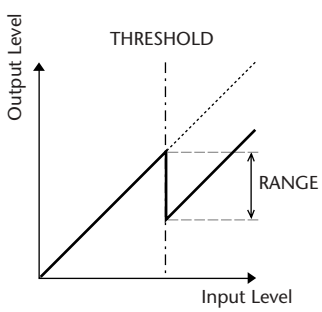



## DUCKING

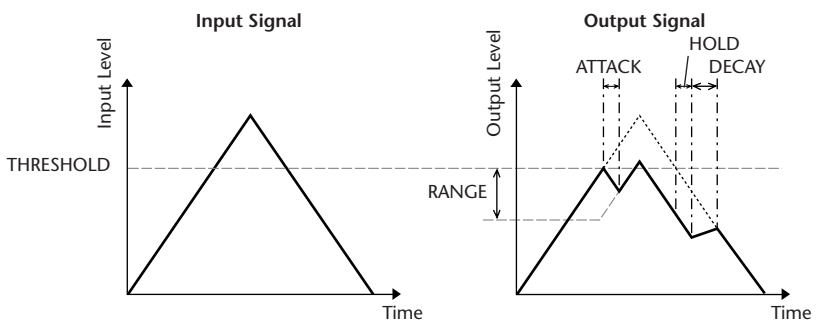
Ducking is commonly used for voice-over applications in which the background music level is reduced automatically when an announcer speaks. When the KEY IN source signal level exceeds the specified THRESHOLD, the output level is attenuated by a specified amount (RANGE).

| Parameter | Range | Description |
|---|---|---|
| **THRESHOLD (dB)** | –54 to 0 (55 points) | This determines the level of trigger signal (KEY IN) required to activate ducking. |
| **RANGE (dB)** | –70 to 0 (71 points) | This determines the amount of attenuation when ducking is activated. |
| **ATTACK (ms)** | 0–120 (121 points) | This determines how soon the signal is ducked once the ducker has been triggered. |
| **HOLD (ms)** | 44.1kHz: 0.02 ms – 2.13 sec<br>48kHz: 0.02 ms – 1.96 sec (160 points) | This determines how long ducking remains active once the trigger signal has fallen below the THRESHOLD level. |
| **DECAY (ms)** | 44.1kHz: 6 ms – 46.0 sec<br>48kHz: 5 ms – 42.3 sec (160 points) | This determines how soon the ducker returns to its normal gain once the trigger signal level drops below the threshold. The value is expressed as the duration required for the level to change by 6 dB. |

• **I/O Characteristics**




• **Time Series Analysis**

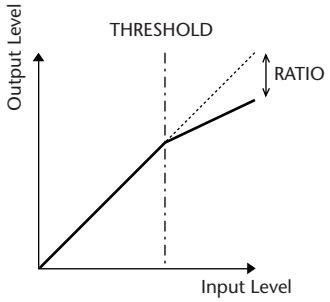


## ■ COMPRESSOR

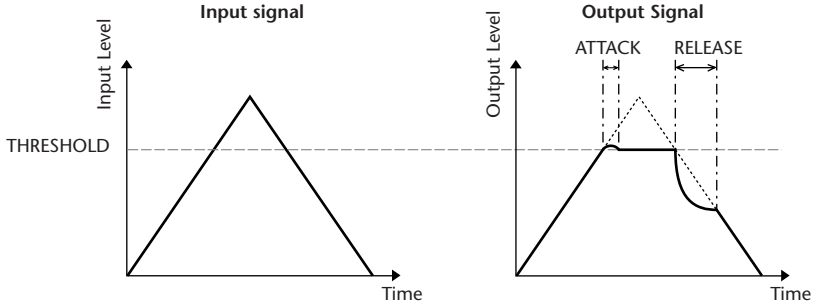
The COMP processor attenuates signals above a specified THRESHOLD by a specified RATIO. The COMP processor can also be used as a limiter, which, with a RATIO of ∞:1, reduces the level to the threshold. This means that the limiter's output level never actually exceeds the threshold.

| Parameter | Range | Description |
|---|---|---|
| **THRESHOLD (dB)** | –54 to 0 (55 points) | This determines the level of input signal required to trigger the compressor. |
| **RATIO** | 1.0:1, 1.1:1, 1.3:1, 1.5:1, 1.7:1, 2.0:1, 2.5:1, 3.0:1, 3.5:1, 4.0:1, 5.0:1, 6.0:1, 8.0:1, 10:1, 20:1, ∞:1 (16 points) | This determines the amount of compression, that is, the change in output signal level relative to change in input signal level. |
| **ATTACK (ms)** | 0–120 (121 points) | This determines how soon the signal will be compressed once the compressor has been triggered. |
| **RELEASE (ms)** | 44.1kHz: 6 ms – 46.0 sec<br>48kHz: 5 ms – 42.3 sec (160 points) | This determines how soon the compressor returns to its normal gain once the trigger signal level drops below the threshold. The value is expressed as the duration required for the level to change by 6 dB. |
| **OUT GAIN (dB)** | 0.0 to +18.0 (181 points) | This sets the compressor's output signal level. |
| **KNEE** | Hard, 1–5 (6 points) | This determines how compression is applied at the threshold. For higher knee settings, compression is applied gradually as the signal exceeds the specified threshold, creating a more natural sound. |

- **I/O Characteristics (KNEE= hard, OUT GAIN=0.0dB)**




- **Time Series Analysis (RATIO= ∞:1)**

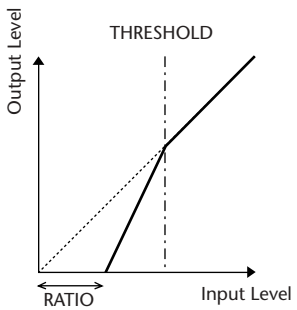



## ■ EXPANDER

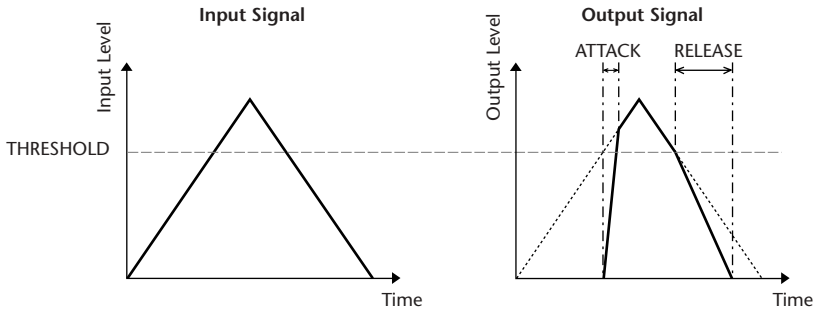
An expander attenuates signals below a specified THRESHOLD by a specified RATIO.

| Parameter | Range | Description |
|---|---|---|
| **THRESHOLD (dB)** | –54 to 0 (55 points) | This determines the level of input signal required to trigger the expander. |
| **RATIO** | 1.0:1, 1.1:1, 1.3:1, 1.5:1, 1.7:1, 2.0:1, 2.5:1, 3.0:1, 3.5:1, 4.0:1, 5.0:1, 6.0:1, 8.0:1, 10:1, 20:1, ∞:1 (16 points) | This determines the amount of expansion. |
| **ATTACK (ms)** | 0–120 (121 points) | This determines how soon the expander returns to its normal gain once the trigger signal level exceeds the threshold. |
| **RELEASE (ms)** | 44.1kHz: 6 ms – 46.0 sec<br>48kHz: 5 ms – 42.3 sec (160 points) | This determines how soon the signal is expanded once the signal level drops below the threshold. The value is expressed as the duration required for the level to change by 6 dB. |
| **OUT GAIN (dB)** | 0.0 to +18.0 (181 points) | This sets the expander's output signal level. |
| **KNEE** | Hard, 1–5 (6 points) | This determines how expansion is applied at the threshold. For higher knee settings, expansion is applied gradually as the signal falls below the specified threshold, creating a more natural sound. |

- **I/O Characteristics (KNEE= hard, OUT GAIN= 0.0dB)**

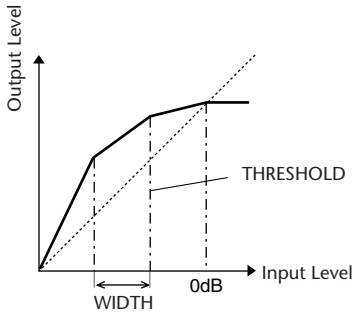



- **Time Series Analysis (RATIO= ∞:1)**



## ■ COMPANDER HARD (COMPANDER-H), COMPANDER SOFT (COMPANDER-S)

The hard and soft companders combine the effects of the compressor, expander and limiter.




The companders function differently at the following levels:

① **0 dB and higher** . . . . . Functions as a limiter.

② **Exceeding the threshold** . . . . . Functions as a compressor.

③ **Below the threshold and width** . . . . Functions as an expander.

The hard compander has an expansion ratio of 5:1, while the soft compander has an expansion ratio of 1.5:1. The expander is essentially turned off when the width is set to maximum. The compressor has a fixed knee setting of 2.

* The gain is automatically adjusted according to the ratio and threshold values, and can be increased by up to 18 dB.
* The OUT GAIN parameter enables you to compensate for the overall level change caused by the compression and expansion processes.

| Parameter | Range | Description |
|---|---|---|
| **THRESHOLD (dB)** | –54 to 0 (55 points) | This determines the level at which compression is applied. |
| **RATIO** | 1.0:1, 1.1:1, 1.3:1, 1.5:1, 1.7:1, 2.0:1, 2.5:1, 3.0:1, 3.5:1, 4.0:1, 5.0:1, 6.0:1, 8.0:1, 10:1, 20:1 (15 points) | This determines the amount of compression. |
| **ATTACK (ms)** | 0–120 (121 points) | This determines how soon the signal is compressed or expanded once the compander has been triggered. |
| **RELEASE (ms)** | 44.1kHz: 6 ms – 46.0 sec<br>48kHz: 5 ms – 42.3 sec (160 points) | This determines how soon the compressor or expander returns to the normal gain once the trigger signal level drops below or exceeds the threshold respectively. The value is expressed as the duration required for the level to change by 6 dB. |
| **OUT GAIN (dB)** | –18.0 to 0.0 (181 points) | This sets the compander's output signal level. |
| **WIDTH (dB)** | 1–90 (90 points) | This determines how far below the threshold expansion will be applied. The expander is activated when the level drops below the threshold and width. |

## ■ DE-ESSER

This detects and compresses only the sibilants and other high-frequency consonants of the vocal.

| Parameter | Range | Description |
|---|---|---|
| **THRESHOLD** | –54 to 0 (55 points) | Threshold level at which the de-esser effect applies. |
| **FREQUENCY** | 1kHz – 12.5kHz (45 points) | Cutoff frequency of the HPF used to detect the high frequencies. |

# Effect Type List

| Title | Type | Description |
|---|---|---|
| **Reverb Hall** | REVERB HALL | Concert hall reverberation simulation with gate |
| **Reverb Room** | REVERB ROOM | Room reverberation simulation with gate |
| **Reverb Stage** | REVERB STAGE | Reverb designed for vocals, with gate |
| **Reverb Plate** | REVERB PLATE | Plate reverb simulation with gate |
| **Early Ref.** | EARLY REF. | Early reflections without the subsequent reverb |
| **Gate Reverb** | GATE REVERB | Gated early reflections |
| **Reverse Gate** | REVERSE GATE | Gated reverse early reflections |
| **Mono Delay** | MONO DELAY | Simple mono delay |
| **Stereo Delay** | STEREO DELAY | Simple stereo delay |
| **Mod.Delay** | MOD.DELAY | Simple repeat delay with modulation |
| **Delay LCR** | DELAY LCR | 3-tap (left, center, right) delay |
| **Echo** | ECHO | Stereo delay with crossed left/right feedback |
| **Chorus** | CHORUS | Chorus |
| **Flange** | FLANGE | Flanger |
| **Symphonic** | SYMPHONIC | Proprietary Yamaha effect that produces a richer and more complex modulation than normal chorus |
| **Phaser** | PHASER | 16-stage stereo phase shifter |
| **Auto Pan** | AUTO PAN | Auto-panner |
| **Tremolo** | TREMOLO | Tremolo |
| **HQ. Pitch** | HQ.PITCH | Mono pitch shifter, producing stable results |
| **Dual Pitch** | DUAL PITCH | Stereo pitch shifter |
| **Rotary** | ROTARY | Rotary speaker simulation |
| **Ring Mod.** | RING MOD. | Ring modulator |
| **Mod.Filter** | MOD.FILTER | Modulated filter |
| **Distortion** | DISTORTION | Distortion |
| **Amp Simulate** | AMP SIMULATE | Guitar amp simulation |
| **Dyna.Filter** | DYNA.FILTER | Dynamically controlled filter |
| **Dyna.Flange** | DYNA.FLANGE | Dynamically controlled flanger |
| **Dyna.Phaser** | DYNA.PHASER | Dynamically controlled phase shifter |
| **Rev+Chorus** | REV+CHORUS | Reverb and chorus in parallel |
| **Rev→Chorus** | REV→CHORUS | Reverb and chorus in series |
| **Rev+Flange** | REV+FLANGE | Reverb and flanger in parallel |
| **Rev→Flange** | REV→FLANGE | Reverb and flanger in series |
| **Rev+Sympho.** | REV+SYMPHO. | Reverb and symphonic in parallel |
| **Rev→Sympho.** | REV→SYMPHO. | Reverb and symphonic in series |
| **Rev→Pan** | REV→PAN | Reverb and auto-pan in series |
| **Delay+Er.** | DELAY+ER. | Delay and early reflections in parallel |
| **Delay→Er.** | DELAY→ER. | Delay and early reflections in series |
| **Delay+Rev** | DELAY+REV | Delay and reverb in parallel |
| **Delay→Rev** | DELAY→REV | Delay and reverb in series |
| **Dist→Delay** | DIST→DELAY | Distortion and delay in series |
| **Multi Filter** | MULTI FILTER | 3-band parallel filter (24 dB/octave) |
| **Freeze** | FREEZE | Simple sampler |
| **Stereo Reverb** | ST REVERB | Stereo reverb |
| **M.Band Dyna.** | M.BAND DYNA. | Multi-band dynamics processor |

| Title | Type | Description |
|---|---|---|
| **M.Band Comp** | M.BAND COMP | Multi-band compressor |
| **REV-X Hall** | REV-X HALL | New reverb algorithm that delivers dense and rich reverberation, smooth decay, and provides a spaciousness and depth that enhances the original sound. Choose from three types depending on your location and needs; REV-X HALL, REV-X ROOM, and REV-X PLATE. |
| **REV-X Room** | REV-X ROOM | |
| **REV-X Plate** | REV-X PLATE | |
| **Comp276** | COMP276 | This compressor emulates the characteristics of an analog compressor that has become a sought-after classic in recording studios. |
| **Comp276S** | COMP276S | This is a stereo model of COMP276. |
| **Comp260** | COMP260 | This compressor emulates the characteristics of a compressor/limiter of the latter 1970s that has become a sought-after classic for live SR. |
| **Comp260S** | COMP260S | This is a stereo model of the COMP260. |
| **Equalizer601** | EQUALIZER601 | This equalizer emulates the characteristics of an analog equalizer of the 1970s. It can be used to obtain a sense of drive. |
| **OpenDeck** | OPENDECK | This is a tape saturation effect that emulates the tape compression produced by two open-reel tape recorders: a recording deck and a reproduction deck. |

# Effects Parameters

## ■ REVERB HALL, REVERB ROOM, REVERB STAGE, REVERB PLATE

One input, two output hall, room, stage, and plate reverb simulations, all with gates.

| Parameter | Range | Description |
|---|---|---|
| REV TIME | 0.3–99.0 s | Reverb time |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| HI. RATIO | 0.1–1.0 | High-frequency reverb time ratio |
| LO. RATIO | 0.1–2.4 | Low-frequency reverb time ratio |
| DIFF. | 0–10 | Reverb diffusion (left–right reverb spread) |
| DENSITY | 0–100% | Reverb density |
| E/R DLY | 0.0–100.0 ms | Delay between early reflections and reverb |
| E/R BAL. | 0–100% | Balance of early reflections and reverb (0% = all reverb, 100% = all early reflections) |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| GATE LVL | OFF, –60 to 0 dB | Level at which gate kicks in |
| ATTACK | 0–120 ms | Gate opening speed |
| HOLD | *1 | Gate open time |
| DECAY | *2 | Gate closing speed |

*1. 0.02 ms–2.13 s (fs=44.1 kHz), 0.02 ms–1.96 s (fs=48 kHz)
*2. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

## ■ EARLY REF.

One input, two output early reflections.

| Parameter | Range | Description |
|---|---|---|
| TYPE | S-Hall, L-Hall, Random, Revers, Plate, Spring | Type of early reflection simulation |
| ROOMSIZE | 0.1–20.0 | Reflection spacing |
| LIVENESS | 0–10 | Early reflections decay characteristics (0 = dead, 10 = live) |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| DIFF. | 0–10 | Reflection diffusion (left–right reflection spread) |
| DENSITY | 0–100% | Reflection density |
| ER NUM. | 1–19 | Number of early reflections |
| FB GAIN | –99 to +99% | Feedback gain |
| HI. RATIO | 0.1–1.0 | High-frequency feedback ratio |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |

## ■ GATE REVERB, REVERSE GATE

One input, two output early reflections with gate, and early reflections with reverse gate.

| Parameter | Range | Description |
|---|---|---|
| TYPE | Type-A, Type-B | Type of early reflection simulation |
| ROOMSIZE | 0.1–20.0 | Reflection spacing |
| LIVENESS | 0–10 | Early reflections decay characteristics (0 = dead, 10 = live) |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| DIFF. | 0–10 | Reflection diffusion (left–right reflection spread) |
| DENSITY | 0–100% | Reflection density |
| HI. RATIO | 0.1–1.0 | High-frequency feedback ratio |
| ER NUM. | 1–19 | Number of early reflections |
| FB GAIN | –99 to +99% | Feedback gain |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |

## ■ MONO DELAY

One input, one output basic repeat delay.

| Parameter | Range | Description |
|---|---|---|
| DELAY | 0.0–2730.0 ms | Delay time |
| FB. GAIN | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| HI. RATIO | 0.1–1.0 | High-frequency feedback ratio |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| SYNC | OFF/ON | Tempo parameter sync on/off |
| NOTE | *1 | Used in conjunction with TEMPO to determine DELAY |

*1. — 𝅘𝅥𝅯³ 𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝
(Max. value depends on tempo setting)

## ■ STEREO DELAY

Two input, two output basic stereo delay.

| Parameter | Range | Description |
|---|---|---|
| DELAY L | 0.0–1350.0 ms | Left channel delay time |
| DELAY R | 0.0–1350.0 ms | Right channel delay time |
| FB. G L | –99 to +99% | Left channel feedback (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| FB. G R | –99 to +99% | Right channel feedback (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| HI. RATIO | 0.1–1.0 | High-frequency feedback ratio |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| SYNC | OFF/ON | Tempo parameter sync on/off |
| NOTE L | *1 | Used in conjunction with TEMPO to determine left channel DELAY |
| NOTE R | *1 | Used in conjunction with TEMPO to determine right channel DELAY |

*1. — 𝅘𝅥𝅯³ 𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ MOD. DELAY

One input, two output basic repeat delay with modulation.

| Parameter | Range | Description |
|---|---|---|
| **DELAY** | 0.0–2725.0 ms | Delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **HI. RATIO** | 0.1–1.0 | High-frequency feedback ratio |
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **WAVE** | Sine/Tri | Modulation waveform |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **DLY.NOTE** | *1 | Used in conjunction with TEMPO to determine DELAY |
| **MOD.NOTE** | *2 | Used in conjunction with TEMPO to determine FREQ |

*1. — 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝
(Maximum value depends on the tempo setting)

*2. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ DELAY LCR

One input, two output 3-tap delay (left, center, right).

| Parameter | Range | Description |
|---|---|---|
| **DELAY L** | 0.0–2730.0 ms | Left channel delay time |
| **DELAY C** | 0.0–2730.0 ms | Center channel delay time |
| **DELAY R** | 0.0–2730.0 ms | Right channel delay time |
| **FB. DLY** | 0.0–2730.0 ms | Feedback delay time |
| **LEVEL L** | –100 to +100% | Left channel delay level |
| **LEVEL C** | –100 to +100% | Center channel delay level |
| **LEVEL R** | –100 to +100% | Right channel delay level |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **HI. RATIO** | 0.1–1.0 | High-frequency feedback ratio |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE L** | *1 | Used in conjunction with TEMPO to determine DELAY L |
| **NOTE C** | *1 | Used in conjunction with TEMPO to determine DELAY C |
| **NOTE R** | *1 | Used in conjunction with TEMPO to determine DELAY R |
| **NOTE FB** | *1 | Used in conjunction with TEMPO to determine FB. DLY |

*1. — 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝
(Maximum value depends on the tempo setting)

## ■ ECHO

Two input, two output stereo delay with crossed feedback loop.

| Parameter | Range | Description |
|---|---|---|
| **DELAY L** | 0.0–1350.0 ms | Left channel delay time |
| **DELAY R** | 0.0–1350.0 ms | Right channel delay time |
| **FB.DLY L** | 0.0–1350.0 ms | Left channel feedback delay time |
| **FB.DLY R** | 0.0–1350.0 ms | Right channel feedback delay time |
| **FB. G L** | –99 to +99% | Left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **FB. G R** | –99 to +99% | Right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **L→R FBG** | –99 to +99% | Left to right channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **R→L FBG** | –99 to +99% | Right to left channel feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **HI. RATIO** | 0.1–1.0 | High-frequency feedback ratio |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE L** | *1 | Used in conjunction with TEMPO to determine DELAY L |
| **NOTE R** | *1 | Used in conjunction with TEMPO to determine DELAY R |
| **NOTE FBL** | *1 | Used in conjunction with TEMPO to determine FB. D L |
| **NOTE FBR** | *1 | Used in conjunction with TEMPO to determine FB. D R |

*1. — 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ CHORUS

Two input, two output chorus effect.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **AM DEPTH** | 0–100% | Amplitude modulation depth |
| **PM DEPTH** | 0–100% | Pitch modulation depth |
| **MOD. DLY** | 0.0–500.0 ms | Modulation delay time |
| **WAVE** | Sine, Tri | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ FLANGE

Two input, two output flange effect.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **MOD. DLY** | 0.0–500.0 ms | Modulation delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **WAVE** | Sine, Tri | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ SYMPHONIC

Two input, two output symphonic effect.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **MOD. DLY** | 0.0–500.0 ms | Modulation delay time |
| **WAVE** | Sine, Tri | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ PHASER

Two input, two output 16-stage phaser.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **OFFSET** | 0–100 | Lowest phase-shifted frequency offset |
| **PHASE** | 0.00–354.38 degrees | Left and right modulation phase balance |
| **STAGE** | 2, 4, 6, 8, 10, 12, 14, 16 | Number of phase shift stages |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ AUTOPAN

Two input, two output autopanner.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **DIR.** | *1 | Panning direction |
| **WAVE** | Sine, Tri, Square | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *2 | Used in conjunction with TEMPO to determine FREQ. |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. L↔R, L→R, L←R, Turn L, Turn R
*2. 𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥𝅯 𝅘𝅥𝅯³ 𝅘𝅥. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ TREMOLO

Two input, two output tremolo effect.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **WAVE** | Sine, Tri, Square | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅰³ 𝅘𝅥𝅮. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ HQ. PITCH

One input, two output high-quality pitch shifter.

| Parameter | Range | Description |
|---|---|---|
| **PITCH** | –12 to +12 semitones | Pitch shift |
| **FINE** | –50 to +50 cents | Pitch shift fine |
| **DELAY** | 0.0–1000.0 ms | Delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **MODE** | 1–10 | Pitch shift precision |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine DELAY |

*1. — 𝅘𝅥𝅯³ 𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅰³ 𝅘𝅥𝅮. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ DUAL PITCH

Two input, two output pitch shifter.

| Parameter | Range | Description |
|---|---|---|
| **PITCH 1** | –24 to +24 semitones | Channel #1 pitch shift |
| **FINE 1** | –50 to +50 cents | Channel #1 pitch shift fine |
| **LEVEL 1** | –100 to +100% | Channel #1 level (plus values for normal phase, minus values for reverse phase) |
| **PAN 1** | L63 to R63 | Channel #1 pan |
| **DELAY 1** | 0.0–1000.0 ms | Channel #1 delay time |
| **FB. G 1** | –99 to +99% | Channel #1 feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **MODE** | 1–10 | Pitch shift precision |
| **PITCH 2** | –24 to +24 semitones | Channel #2 pitch shift |
| **FINE 2** | –50 to +50 cents | Channel #2 pitch shift fine |
| **LEVEL 2** | –100 to +100% | Channel #2 level (plus values for normal phase, minus values for reverse phase) |
| **PAN 2** | L63 to R63 | Channel #2 pan |
| **DELAY 2** | 0.0–1000.0 ms | Channel #2 delay time |
| **FB. G 2** | –99 to +99% | Channel #2 feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE 1** | *1 | Used in conjunction with TEMPO to determine Channel #1 delay |
| **NOTE 2** | *1 | Used in conjunction with TEMPO to determine Channel #2 delay |

*1. — 𝅘𝅥𝅯³ 𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅰³ 𝅘𝅥𝅮. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ ROTARY

One input, two output rotary speaker simulator.

| Parameter | Range | Description |
|---|---|---|
| **ROTATE** | STOP, START | Rotation stop, start |
| **SPEED** | SLOW, FAST | Rotation speed (see SLOW and FAST parameters) |
| **SLOW** | 0.05–10.00 Hz | SLOW rotation speed |
| **FAST** | 0.05–10.00 Hz | FAST rotation speed |
| **DRIVE** | 0–100 | Overdrive level |
| **ACCEL** | 0–10 | Acceleration at speed changes |
| **LOW** | 0–100 | Low-frequency filter |
| **HIGH** | 0–100 | High-frequency filter |

## ■ RING MOD.

Two input, two output ring modulator.

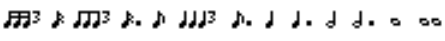
| Parameter | Range | Description |
|---|---|---|
| **SOURCE** | OSC, SELF | Modulation source: oscillator or input signal |
| **OSC FREQ** | 0.0–5000.0 Hz | Oscillator frequency |
| **FM FREQ.** | 0.05–40.00 Hz | Oscillator frequency modulation speed |
| **FM DEPTH** | 0–100% | Oscillator frequency modulation depth |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **FM NOTE** | *1 | Used in conjunction with TEMPO to determine FM FREQ |

*1. 𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅮 𝅘𝅥𝅰³ 𝅘𝅥𝅮. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ MOD. FILTER

Two input, two output modulation filter.

| Parameter | Range | Description |
|---|---|---|
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **PHASE** | 0.00–354.38 degrees | Left-channel modulation and right-channel modulation phase difference |
| **TYPE** | LPF, HPF, BPF | Filter type: low pass, high pass, band pass |
| **OFFSET** | 0–100 | Filter frequency offset |
| **RESO.** | 0–20 | Filter resonance |
| **LEVEL** | 0–100 | Output level |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ |

*1. 

## ■ DISTORTION

One input, two output distortion effect.

| Parameter | Range | Description |
|---|---|---|
| **DST TYPE** | DST1, DST2, OVD1, OVD2, CRUNCH | Distortion type (DST = distortion, OVD = overdrive) |
| **DRIVE** | 0–100 | Distortion drive |
| **MASTER** | 0–100 | Master volume |
| **TONE** | –10 to +10 | Tone |
| **N. GATE** | 0–20 | Noise reduction |

## ■ AMP SIMULATE

One input, two output guitar amp simulator.

| Parameter | Range | Description |
|---|---|---|
| **AMP TYPE** | *1 | Guitar amp simulation type |
| **DST TYPE** | DST1, DST2, OVD1, OVD2, CRUNCH | Distortion type (DST = distortion, OVD = overdrive) |
| **DRIVE** | 0–100 | Distortion drive |
| **MASTER** | 0–100 | Master volume |
| **BASS** | 0–100 | Bass tone control |
| **MIDDLE** | 0–100 | Middle tone control |
| **TREBLE** | 0–100 | High tone control |
| **N. GATE** | 0–20 | Noise reduction |
| **CAB DEP** | 0–100% | Speaker cabinet simulation depth |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |

*1. STK-M1, STK-M2, THRASH, MIDBST, CMB-PG, CMB-VR, CMB-DX, CMB-TW, MINI, FLAT

## ■ DYNA. FILTER

Two input, two output dynamically controlled filter.

| Parameter | Range | Description |
|---|---|---|
| **SOURCE** | INPUT, MIDI | Control source: input signal or MIDI Note On velocity |
| **SENSE** | 0–100 | Sensitivity |
| **DIR.** | UP, DOWN | Upward or downward frequency change |
| **DECAY** | *1 | Filter frequency change decay speed |
| **TYPE** | LPF, HPF, BPF | Filter type |
| **OFFSET** | 0–100 | Filter frequency offset |
| **RESO.** | 0–20 | Filter resonance |
| **LEVEL** | 0–100 | Output Level |

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

## ■ DYNA. FLANGE

Two input, two output dynamically controlled flanger.

| Parameter | Range | Description |
|---|---|---|
| **SOURCE** | INPUT, MIDI | Control source: input signal or MIDI Note On velocity |
| **SENSE** | 0–100 | Sensitivity |
| **DIR.** | UP, DOWN | Upward or downward frequency change |
| **DECAY** | *1 | Decay speed |
| **OFFSET** | 0–100 | Delay time offset |
| **FB.GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **EQ F** | 100 Hz–8.00 kHz | EQ (peaking type) frequency |
| **EQ G** | –12.0 to +12.0 dB | EQ (peaking type) gain |
| **EQ Q** | 10.0–0.10 | EQ (peaking type) bandwidth |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

## ■ DYNA. PHASER

Two input, two output dynamically controlled phaser.

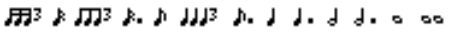
| Parameter | Range | Description |
|---|---|---|
| **SOURCE** | INPUT, MIDI | Control source: input signal or MIDI Note On velocity |
| **SENSE** | 0–100 | Sensitivity |
| **DIR.** | UP, DOWN | Upward or downward frequency change |
| **DECAY** | *1 | Decay speed |
| **OFFSET** | 0–100 | Lowest phase-shifted frequency offset |
| **FB.GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **STAGE** | 2, 4, 6, 8, 10, 12, 14, 16 | Number of phase shift stages |
| **LSH F** | 21.2 Hz–8.00 kHz | Low shelving filter frequency |
| **LSH G** | –12.0 to +12.0 dB | Low shelving filter gain |
| **HSH F** | 50.0 Hz–16.0 kHz | High shelving filter frequency |
| **HSH G** | –12.0 to +12.0 dB | High shelving filter gain |

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

## ■ REV+CHORUS

One input, two output reverb and chorus effects in parallel.

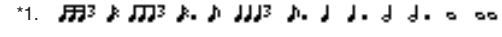
| Parameter | Range | Description |
|---|---|---|
| **REV TIME** | 0.3–99.0 s | Reverb time |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **HI. RATIO** | 0.1–1.0 | High-frequency reverb time ratio |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **REV/CHO** | 0–100% | Reverb and chorus balance (0% = all reverb, 100% = all chorus) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **AM DEPTH** | 0–100% | Amplitude modulation depth |
| **PM DEPTH** | 0–100% | Pitch modulation depth |
| **MOD. DLY** | 0.0–500.0 ms | Modulation delay time |
| **WAVE** | Sine, Tri | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |

*1. 

## ■ REV→CHORUS

One input, two output reverb and chorus effects in series.

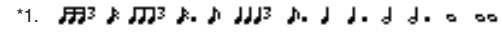
| Parameter | Range | Description |
|---|---|---|
| **REV TIME** | 0.3–99.0 s | Reverb time |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **HI. RATIO** | 0.1–1.0 | High-frequency reverb time ratio |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **REV.BAL** | 0–100% | Reverb and chorused reverb balance (0% = all chorused reverb, 100% = all reverb) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **AM DEPTH** | 0–100% | Amplitude modulation depth |
| **PM DEPTH** | 0–100% | Pitch modulation depth |
| **MOD. DLY** | 0.0–500.0 ms | Modulation delay time |
| **WAVE** | Sine, Tri | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |

*1. 

## ■ REV+FLANGE

One input, two output reverb and flanger effects in parallel.

| Parameter | Range | Description |
|---|---|---|
| **REV TIME** | 0.3–99.0 s | Reverb time |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **HI. RATIO** | 0.1–1.0 | High-frequency reverb time ratio |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **REV/FLG** | 0–100% | Reverb and flange balance (0% = all reverb, 100% = all flange) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **MOD. DLY** | 0.0–500.0 ms | Modulation delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **WAVE** | Sine, Tri | Modulation waveform |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE** | *1 | Used in conjunction with TEMPO to determine FREQ. |

*1. 

## ■ REV→FLANGE

One input, two output reverb and flanger effects in series.

| Parameter | Range | Description |
|---|---|---|
| REV TIME | 0.3–99.0 s | Reverb time |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| HI. RATIO | 0.1–1.0 | High-frequency reverb time ratio |
| DIFF. | 0–10 | Spread |
| DENSITY | 0–100% | Reverb density |
| REV.BAL | 0–100% | Reverb and flanged reverb balance (0% = all flanged reverb, 100% = all reverb) |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| FREQ. | 0.05–40.00 Hz | Modulation speed |
| DEPTH | 0–100% | Modulation depth |
| MOD. DLY | 0.0–500.0 ms | Modulation delay time |
| FB. GAIN | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| WAVE | Sine, Tri | Modulation waveform |
| SYNC | OFF/ON | Tempo parameter sync on/off |
| NOTE | *1 | Used in conjunction with TEMPO to determine FREQ. |

*1. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ REV+SYMPHO.

One input, two output reverb and symphonic effects in parallel.

| Parameter | Range | Description |
|---|---|---|
| REV TIME | 0.3–99.0 s | Reverb time |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| HI. RATIO | 0.1–1.0 | High-frequency reverb time ratio |
| DIFF. | 0–10 | Spread |
| DENSITY | 0–100% | Reverb density |
| REV/SYM | 0–100% | Reverb and symphonic balance (0% = all reverb, 100% = all symphonic) |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| FREQ. | 0.05–40.00 Hz | Modulation speed |
| DEPTH | 0–100% | Modulation depth |
| MOD. DLY | 0.0–500.0 ms | Modulation delay time |
| WAVE | Sine, Tri | Modulation waveform |
| SYNC | OFF/ON | Tempo parameter sync on/off |
| NOTE | *1 | Used in conjunction with TEMPO to determine FREQ. |

*1. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ REV→SYMPHO.

One input, two output reverb and symphonic effects in series.

| Parameter | Range | Description |
|---|---|---|
| REV TIME | 0.3–99.0 s | Reverb time |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| HI. RATIO | 0.1–1.0 | High-frequency reverb time ratio |
| DIFF. | 0–10 | Spread |
| DENSITY | 0–100% | Reverb density |
| REV.BAL | 0–100% | Reverb and symphonic reverb balance (0% = all symphonic reverb, 100% = all reverb) |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| FREQ. | 0.05–40.00 Hz | Modulation speed |
| DEPTH | 0–100% | Modulation depth |
| MOD. DLY | 0.0–500.0 ms | Modulation delay time |
| WAVE | Sine, Tri | Modulation waveform |
| SYNC | OFF/ON | Tempo parameter sync on/off |
| NOTE | *1 | Used in conjunction with TEMPO to determine FREQ. |

*1. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ REV→PAN

This is a 1-in/2-out series-connected reverb and auto-pan effect.

| Parameter | Range | Description |
|---|---|---|
| REV TIME | 0.3–99.0 s | Reverb time |
| INI. DLY | 0.0–500.0 ms | Initial delay before reverb begins |
| HI. RATIO | 0.1–1.0 | High-frequency reverb time ratio |
| DIFF. | 0–10 | Spread |
| DENSITY | 0–100% | Reverb density |
| REV.BAL | 0–100% | Reverb and panned reverb balance (0% = all panned reverb, 100% = all reverb) |
| HPF | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| LPF | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| FREQ. | 0.05–40.00 Hz | Modulation speed |
| DEPTH | 0–100% | Modulation depth |
| DIR. | *1 | Panning direction |
| WAVE | Sine, Tri, Square | Modulation waveform |
| SYNC | OFF/ON | Tempo parameter sync on/off |
| NOTE | *2 | Used in conjunction with TEMPO to determine FREQ. |

*1. L↔R, L→R, L←R, Turn L, Turn R
*2. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅮𝅘𝅥𝅮𝅘𝅥𝅮³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ DELAY+ER.

One input, two output delay and early reflections effects in parallel.

| Parameter | Range | Description |
|---|---|---|
| **DELAY L** | 0.0–1000.0 ms | Left channel delay time |
| **DELAY R** | 0.0–1000.0 ms | Right channel delay time |
| **FB. DLY** | 0.0–1000.0 ms | Feedback delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **HI. RATIO** | 0.1–1.0 | High-frequency feedback ratio |
| **DLY/ER** | 0–100% | Delay and early reflections balance (0% = all delay, 100% = all early reflections) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **TYPE** | S-Hall, L-Hall, Random, Revers, Plate, Spring | Type of early reflection simulation |
| **ROOMSIZE** | 0.1–20.0 | Reflection spacing |
| **LIVENESS** | 0–10 | Early reflections decay characteristics (0 = dead, 10 = live) |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **ER NUM.** | 1–19 | Number of early reflections |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE L** | *1 | Used in conjunction with TEMPO to determine left channel DELAY L |
| **NOTE R** | *1 | Used in conjunction with TEMPO to determine right channel DELAY R |
| **NOTE FB** | *1 | Used in conjunction with TEMPO to determine FB. DLY |

*1. —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ DELAY→ER.

One input, two output delay and early reflections effects in series.

| Parameter | Range | Description |
|---|---|---|
| **DELAY L** | 0.0–1000.0 ms | Left channel delay time |
| **DELAY R** | 0.0–1000.0 ms | Right channel delay time |
| **FB. DLY** | 0.0–1000.0 ms | Feedback delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **HI. RATIO** | 0.1–1.0 | High-frequency feedback ratio |
| **DLY.BAL** | 0–100% | Delay and early reflected delay balance (0% = all early reflected delay, 100% = all delay) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **TYPE** | S-Hall, L-Hall, Random, Revers, Plate, Spring | Type of early reflection simulation |
| **ROOMSIZE** | 0.1–20.0 | Reflection spacing |
| **LIVENESS** | 0–10 | Early reflections decay characteristics (0 = dead, 10 = live) |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **ER NUM.** | 1–19 | Number of early reflections |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE L** | *1 | Used in conjunction with TEMPO to determine left channel DELAY L |
| **NOTE R** | *1 | Used in conjunction with TEMPO to determine right channel DELAY R |
| **NOTE FB** | *1 | Used in conjunction with TEMPO to determine FB. DLY |

*1. —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ DELAY+REV

One input, two output delay and reverb effects in parallel.

| Parameter | Range | Description |
|---|---|---|
| **DELAY L** | 0.0–1000.0 ms | Left channel delay time |
| **DELAY R** | 0.0–1000.0 ms | Right channel delay time |
| **FB. DLY** | 0.0–1000.0 ms | Feedback delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **DELAY HI** | 0.1–1.0 | Delay high-frequency feedback ratio |
| **DLY/REV** | 0–100% | Delay and reverb balance (0% = all delay, 100% = all reverb) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **REV TIME** | 0.3–99.0 s | Reverb time |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **REV HI** | 0.1–1.0 | High-frequency reverb time ratio |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE L** | *1 | Used in conjunction with TEMPO to determine left channel DELAY L |
| **NOTE R** | *1 | Used in conjunction with TEMPO to determine right channel DELAY R |
| **NOTE FB** | *1 | Used in conjunction with TEMPO to determine FB. DLY |

*1. —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ DELAY→REV

One input, two output delay and reverb effects in series.

| Parameter | Range | Description |
|---|---|---|
| **DELAY L** | 0.0–1000.0 ms | Left channel delay time |
| **DELAY R** | 0.0–1000.0 ms | Right channel delay time |
| **FB. DLY** | 0.0–1000.0 ms | Feedback delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **DELAY HI** | 0.1–1.0 | Delay high-frequency feedback ratio |
| **DLY.BAL** | 0–100% | Delay and delayed reverb balance (0% = all delayed reverb, 100% = all delay) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |
| **REV TIME** | 0.3–99.0 s | Reverb time |
| **INI. DLY** | 0.0–500.0 ms | Initial delay before reverb begins |
| **REV HI** | 0.1–1.0 | High-frequency reverb time ratio |
| **DIFF.** | 0–10 | Spread |
| **DENSITY** | 0–100% | Reverb density |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **NOTE L** | *1 | Used in conjunction with TEMPO to determine left channel DELAY L |
| **NOTE R** | *1 | Used in conjunction with TEMPO to determine right channel DELAY R |
| **NOTE FB** | *1 | Used in conjunction with TEMPO to determine FB. DLY |

*1. —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝
(Maximum value depends on the tempo setting)

## ■ DIST→DELAY

One input, two output distortion and delay effects in series.

| Parameter | Range | Description |
|---|---|---|
| **DST TYPE** | DST1, DST2, OVD1, OVD2, CRUNCH | Distortion type (DST = distortion, OVD = overdrive) |
| **DRIVE** | 0–100 | Distortion drive |
| **MASTER** | 0–100 | Master volume |
| **TONE** | –10 to +10 | Tone control |
| **N. GATE** | 0–20 | Noise reduction |
| **SYNC** | OFF/ON | Tempo parameter sync on/off |
| **DLY.NOTE** | *1 | Used in conjunction with TEMPO to determine DELAY |
| **MOD.NOTE** | *2 | Used in conjunction with TEMPO to determine FREQ. |
| **DELAY** | 0.0–2725.0 ms | Delay time |
| **FB. GAIN** | –99 to +99% | Feedback gain (plus values for normal-phase feedback, minus values for reverse-phase feedback) |
| **HI. RATIO** | 0.1–1.0 | High-frequency feedback ratio |
| **FREQ.** | 0.05–40.00 Hz | Modulation speed |
| **DEPTH** | 0–100% | Modulation depth |
| **DLY.BAL** | 0–100% | Distortion and delay balance (0% = all distortion, 100% = all delayed distortion) |

*1. —— 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝
(Maximum value depends on the tempo setting)

*2. 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥𝅯 𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯³ 𝅘𝅥𝅯. 𝅘𝅥 𝅘𝅥. 𝅗𝅥 𝅗𝅥. 𝅝 𝅝𝅝

## ■ MULTI FILTER

Two input, two output 3-band multi-filter (24 dB/octave).

| Parameter | Range | Description |
|---|---|---|
| **TYPE 1** | LPF, HPF, BPF | Filter 1 type: high pass, low pass, band pass |
| **FREQ. 1** | 28.0 Hz–16.0 kHz | Filter 1 frequency |
| **LEVEL 1** | 0–100 | Filter 1 level |
| **RESO. 1** | 0–20 | Filter 1 resonance |
| **TYPE 2** | LPF, HPF, BPF | Filter 2 type: high pass, low pass, band pass |
| **FREQ. 2** | 28.0 Hz–16.0 kHz | Filter 2 frequency |
| **LEVEL 2** | 0–100 | Filter 2 level |
| **RESO. 2** | 0–20 | Filter 2 resonance |
| **TYPE 3** | LPF, HPF, BPF | Filter 3 type: high pass, low pass, band pass |
| **FREQ. 3** | 28.0 Hz–16.0 kHz | Filter 3 frequency |
| **LEVEL 3** | 0–100 | Filter 3 level |
| **RESO. 3** | 0–20 | Filter 3 resonance |

## ■ FREEZE

One input, two output basic sampler.

| Parameter | Range | Description |
|---|---|---|
| **REC MODE** | MANUAL, INPUT | In MANUAL mode, recording is started by pressing the REC and PLAY buttons. In INPUT mode, Record-Ready mode is engaged by pressing the REC button, and actual recording is triggered by the input signal. |
| **REC DLY** | –1000 to +1000 ms | Recording delay. For plus values, recording starts after the trigger is received. For minus values, recording starts before the trigger is received. |
| **PLY MODE** | MOMENT, CONTI., INPUT | In MOMENT mode, the sample plays only while the that the PLAY button is pressed. In CONT mode, playback continues once the PLAY button has been pressed. The number of times the sample plays is set using the LOOP NUM parameter. In INPUT mode, playback is triggered by the input signal. |
| **TRG LVL** | –60 to 0 dB | Input trigger level (i.e., the signal level required to trigger recording or playback) |
| **TRG MASK** | 0–1000 ms | Once playback has been triggered, subsequent triggers are ignored for the duration of the TRG MASK time. |
| **START** | *1 | Playback start point in milliseconds |
| **END** | *1 | Playback end point in milliseconds |
| **LOOP** | *1 | Loop start point in milliseconds |
| **LOOP NUM** | 0–100 | Number of times the sample plays |
| **PITCH** | –12 to +12 semitones | Playback pitch shift |
| **FINE** | –50 to +50 cents | Playback pitch shift fine |
| **MIDI TRG** | OFF, C1–C6, ALL | PLAY button can be triggered by using MIDI Note on/off messages. |
| **START [SAMPLE]** | 0–131000 | Playback start point in samples |
| **END [SAMPLE]** | 0–131000 | Playback end point in samples |
| **LOOP [SAMPLE]** | 0–131000 | Loop start point in samples |

*1. 0.0–5941.0 ms (fs=44.1 kHz), 0.0 ms–5458.3 ms (fs=48 kHz)

## ■ STEREO REVERB

Two input, two output stereo reverb.

| Parameter | Range | Description |
|---|---|---|
| **REV TIME** | 0.3–99.0 s | Reverb time |
| **REV TYPE** | Hall, Room, Stage, Plate | Reverb type |
| **INI. DLY** | 0.0–100.0 ms | Initial delay before reverb begins |
| **HI. RATIO** | 0.1–1.0 | High-frequency reverb time ratio |
| **LO. RATIO** | 0.1–2.4 | Low-frequency reverb time ratio |
| **DIFF.** | 0–10 | Reverb diffusion (left–right reverb spread) |
| **DENSITY** | 0–100% | Reverb density |
| **E/R BAL.** | 0–100% | Balance of early reflections and reverb (0% = all reverb, 100% = all early reflections) |
| **HPF** | THRU, 21.2 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 50.0 Hz–16.0 kHz, THRU | Low-pass filter cutoff frequency |

## ■ M. BAND DYNA.

Two input, two output 3-band dynamics processor, with individual solo and gain reduction metering for each band.

| Parameter | Range | Description |
|---|---|---|
| **LOW GAIN** | –96.0 to +12.0 dB | Low band level |
| **MID GAIN** | –96.0 to +12.0 dB | Mid band level |
| **HI. GAIN** | –96.0 to +12.0 dB | High band level |
| **PRESENCE** | –10 to +10 | For positive values, the threshold of the high band is lowered and the threshold of the low band is increased. For negative values, the opposite will occur. When set to 0, all three bands are affected the same. |
| **L–M XOVR** | 21.2 Hz–8.00 kHz | Low/mid crossover frequency |
| **M–H XOVR** | 21.2 Hz–8.00 kHz | Mid/high crossover frequency |
| **SLOPE** | –6 dB, –12 dB | Filter slope |
| **CEILING** | –6.0 dB to 0.0 dB, OFF | Specifies the maximum output level |
| **CMP. THRE** | –24.0 dB to 0.0 dB | Compressor threshold |
| **CMP. RAT** | 1:1 to 20:1 | Compressor ratio |
| **CMP. ATK** | 0–120 ms | Compressor attack |
| **CMP. REL** | *1 | Compressor release time |
| **CMP. KNEE** | 0–5 | Compressor knee |
| **CMP. BYP** | OFF/ON | Compressor bypass |
| **LOOKUP** | 0.0–100.0 ms | Lookup delay |
| **EXP. THRE** | –54.0 dB to –24.0 dB | Expander threshold |
| **EXP. RAT** | 1:1 to ∞:1 | Expander ratio |
| **EXP. REL** | *1 | Expander release time |
| **EXP. BYP** | OFF/ON | Expander bypass |
| **LIM. THRE** | –12.0 dB to 0.0 dB | Limiter threshold |
| **LIM. ATK** | 0–120 ms | Limiter attack |
| **LIM. REL** | *1 | Limiter release time |
| **LIM. KNEE** | 0–5 | Limiter knee |
| **LIM. BYP** | OFF/ON | Limiter bypass |

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

## ■ M.BAND COMP

Two input, two output 3-band compressor, with individual solo and gain reduction metering for each band.

| Parameter | Range | Description |
|---|---|---|
| **LOW GAIN** | –96.0 to +12.0 dB | Low band level |
| **MID GAIN** | –96.0 to +12.0 dB | Mid band level |
| **HI. GAIN** | –96.0 to +12.0 dB | High band level |
| **L-M XOVR** | 21.2 Hz–8.00 kHz | Low/mid crossover frequency |
| **M-H XOVR** | 21.2 Hz–8.00 kHz | Mid/high crossover frequency |
| **SLOPE** | –6 dB, –12 dB | Filter slope |
| **CEILING** | –6.0 dB to 0.0 dB, OFF | Specifies the maximum output level |
| **LOOKUP** | 0.0–100.0 ms | Lookup delay |
| **LOW THRE** | –54.0 dB to 0.0 dB | Low band threshold level |
| **MID THRE** | –54.0 dB to 0.0 dB | Mid band threshold level |
| **HI. THRE** | –54.0 dB to 0.0 dB | High band threshold level |
| **RATIO** | 1:1 to 20:1 | Compression ratio |
| **ATTACK** | 0–120 ms | Compressor attack time |
| **RELEASE** | *1 | Compressor release time |
| **KNEE** | 0–5 | Compressor knee |
| **BYPASS** | OFF/ON | Bypasses the compressor |

*1. 6.0 ms–46.0 s (fs=44.1 kHz), 5.0 ms–42.3 s (fs=48 kHz)

## ■ REV-X HALL, REV-X ROOM, REV-X PLATE

Newly-developed two input, two output reverb algorithm. Delivers dense and rich reverberation, smooth decay, and provides a spaciousness and depth that enhances the original sound. Choose from three types depending on your location and needs; REV-X HALL, REV-X ROOM, and REV-X PLATE.

| Parameter | Range | Description |
|---|---|---|
| **REV TIME** | 0.28–27.94 s*1 | Reverb time |
| **INI. DLY** | 0.0–120.0 ms | Initial delay before reverb begins |
| **HI. RATIO** | 0.1–1.0 | High-frequency reverb time ratio |
| **LO. RATIO** | 0.1–2.4 | Low-frequency reverb time ratio |
| **LO.FREQ** | 22.0 Hz–18.0 kHz | Frequency point for LO.RATIO setting |
| **DIFF.** | 0–10 | Reverb diffusion (left–right reverb spread) |
| **ROOM SIZE** | 0–28 | Size of room |
| **DECAY** | 0–53 | Gate closing speed |
| **HPF** | THRU, 22.0 Hz–8.00 kHz | High-pass filter cutoff frequency |
| **LPF** | 1.00 kHz–18.0 kHz, THRU | Low-pass filter cutoff frequency |

*1. These values are for when the effect type is REV-X HALL and the ROOM SIZE=28. The range will differ depending on the effect type and ROOM SIZE setting.

## ■ COMP276

This effect emulates the characteristics of analog compressors that are widely used in recording studios. It will produce a thick, strong frame sound suitable for drums and bass. You can control two monaural channels independently.

| Parameter | Range | Description |
|---|---|---|
| **INPUT 1** | –180.0 to 0 dB | Adjusts the CH1 input level |
| **OUTPUT 1** | –180.0 to 0 dB | Adjusts the CH1 output gain |
| **RATIO 1** | 2:1, 4:1, 8:1, 12:1, 20:1 | Ratio for CH1 compressor |
| **ATTACK 1** | 0.022–50.4 ms | Attack time for CH1 compressor |
| **RELEASE1** | 10.88–544.22 ms | Release time for CH1 compressor |
| **MAKE UP1** | OFF, ON | Automatically corrects output gain reduction when CH1 compressor is applied |
| **SIDEHPF1** | OFF, ON | When the HPF in the side chain of the CH1 compressor is turned on, the compression applied to the low range will be weakened, thus emphasizing the low range. |
| **INPUT 2** | –180.0 to 0 dB | Adjusts the CH2 input level |
| **OUTPUT 2** | –180.0 to 0 dB | Adjusts the CH2 output gain |
| **RATIO 2** | 2:1, 4:1, 8:1, 12:1, 20:1 | Ratio of CH2 compressor |
| **ATTACK 2** | 0.022–50.40 ms | Attack time of CH2 compressor |
| **RELEASE2** | 10.88–544.22 ms | Release time of CH2 compressor |
| **MAKE UP2** | OFF, ON | Automatically corrects output gain reduction when the CH2 compressor is applied |
| **SIDEHPF2** | OFF, ON | When the HPF in the side chain of the CH2 compressor is turned on, the compression applied to the low range will be weakened, thus emphasizing the low range. |

## ■ COMP276S

This effect emulates the characteristics of analog compressors that are widely used in recording studios. It produces a thick, strong frame sound suitable for drums and bass. You can link and control the L and R channel parameters.

| Parameter | Range | Description |
|---|---|---|
| **INPUT** | –180.0 to 0 dB | Adjusts the input level |
| **OUTPUT** | –180.0 to 0 dB | Adjusts the output gain |
| **RATIO** | 1:2, 4:1, 8:1, 12:1, 20:1 | Ratio of the compressor |
| **ATTACK** | 0.022–50.40 ms | Attack time of the compressor |
| **RELEASE** | 10.88–544.22 ms | Release time of the compressor |
| **MAKE UP** | OFF, ON | Automatically corrects output gain reduction when the compressor is applied |
| **SIDE HPF** | OFF, ON | When the HPF in the side chain of the compressor is turned on, the compression applied to the low range will be weakened, thus emphasizing the low range. |

## ■ COMP260

This effect emulates the characteristics of mid 70's compressors/limiters that are the standard for live SR. You can control two monaural channels independently. You can also link several parameters via stereo links.

| Parameter | Range | Description |
|---|---|---|
| **THRE.1** | –60.0 to 0.0 dB | Threshold of CH compressor |
| **KNEE1** | SOFT, MEDIUM, HARD | Knee of CH1 compressor |
| **ATTACK1** | 0.010–80.0 ms | Attack time of CH1 compressor |
| **RELEASE1** | 6.2–999.0 ms | Release time of CH1 compressor |
| **RATIO1** | 1.00–500, ∞ | Ratio of CH1 compressor |
| **OUTPUT1** | –20.0 to 40.0 dB | Adjusts the CH1 output gain |
| **THRE.2** | –60.0 to 0.0 dB | Threshold of CH2 compressor |
| **KNEE2** | SOFT, MEDIUM, HARD | Knee of CH2 compressor |
| **ATTACK2** | 0.010–80.0 ms | Attack time of CH2 compressor |
| **RELEASE2** | 6.2–999.0 ms | Release time of CH2 compressor |
| **RATIO2** | 1.00–500, ∞ | Ratio of CH2 compressor |
| **OUTPUT2** | –20.0 to 40.0 dB | Adjusts the CH2 output gain |
| **ST LINK** | OFF, ON | Links CH1 and CH2 as a stereo pair. THRE., KNEE, ATTACK, RELEASE, and RATIO parameters are linked; OUTPUT parameter is not linked |

## ■ COMP260S

This effect emulates the characteristics of mid 70's compressors/limiters that are the standard for live SR. You can link and control the L and R channel parameters.

| Parameter | Range | Description |
|---|---|---|
| **THRE.** | –60.0 to 0.0 dB | Threshold of the compressor |
| **KNEE** | SOFT, MEDIUM, HARD | Knee of the compressor |
| **ATTACK** | 0.010–80.0 ms | Attack time of the compressor |
| **RELEASE** | 6.2–999.0 ms | Release time of the compressor |
| **RATIO** | 1.00–500, ∞ | Ratio of the compressor |
| **OUTPUT** | –20.0 to 40.0 dB | Adjusts the output gain |

## ■ EQUALIZER601

This effect emulates the characteristics of 70's analog equalizers. Re-creating the distortion of typical analog circuits will add drive to the sound.

| Parameter | Range | Description |
|---|---|---|
| **LO TYPE** | HPF-2/1, LSH-1/2 | Type of EQ1 |
| **LO F** | 16.0 Hz to 20.0 kHz | Cut-off frequency of EQ1 |
| **LO G** | –18.0 to +18.0 dB | Gain of EQ1 |
| **MID1 Q** | 0.50–16.00 | Q of EQ2 |
| **MID1 F** | 16.0 Hz to 20.0 kHz | Center frequency of EQ2 |
| **MID1 G** | –18.0 to +18.0 dB | Gain of EQ2 |
| **MID2 Q** | 0.50–16.00 | Q of EQ3 |
| **MID2 F** | 16.0 Hz to 20.0 kHz | Center frequency of EQ3 |
| **MID2 G** | –18.0 to +18.0 dB | Gain of EQ3 |
| **INPUT** | –18.0 to +18.0 dB | Input gain |
| **OUTPUT** | –18.0 to +18.0 dB | Output gain |
| **MID3 Q** | 0.50–16.00 | Q of EQ4 |
| **MID3 F** | 16.0 Hz to 20.0 kHz | Center frequency of EQ4 |
| **MID3 G** | –18.0 to +18.0 dB | Gain of EQ4 |
| **MID4 Q** | 0.50–16.00 | Q of EQ5 |
| **MID4 F** | 16.0 Hz to 20.0 kHz | Center frequency of EQ5 |
| **MID4 G** | –18.0 to +18.0 dB | Gain of EQ5 |
| **HI TYPE** | LPF-2/1, HSH-1/2 | Type of EQ6 |
| **HI F** | 16.0 Hz to 20.0 kHz*1 | Cut-off frequency of EQ6 |
| **HI G** | –18.0 to +18.0 dB | Gain of EQ6 |
| **LO SW** | OFF, ON | Switches EQ1 on/off |
| **MID1 SW** | OFF, ON | Switches EQ2 on/off |
| **MID2 SW** | OFF, ON | Switches EQ3 on/off |
| **MID3 SW** | OFF, ON | Switches EQ4 on/off |
| **MID4 SW** | OFF, ON | Switches EQ5 on/off |
| **HI SW** | OFF, ON | Switches EQ6 on/off |
| **TYPE** | CLEAN, DRIVE | Selects the equalizer type. The CLEAN equalizer provides non-distorted, clear, typical digital sound, emulating variations in frequency response in the analog circuits. The DRIVE equalizer provides distorted, driven sound that enhances analog flavor, emulating changes in frequency response in the analog circuits. |

*1. 16.0 Hz to 20.0 kHz (LPF-1, LPF-2), 1.0 kHz to 20.0 kHz (HSH-1, HSH-2)

## ■ OPENDECK

It emulates the tape compression created by two open reel tape recorders (a recording deck and a playback deck.) You can change the sound quality by adjusting various elements, such as the deck type, tape quality, playback speed, etc.

| Parameter | Range | Description |
|---|---|---|
| **REC DEC** | Swss70, Swss78, Swss85, Amer70 | Selects the recording deck type |
| **REC LVL** | –96.0 to +18.0 dB | Adjusts the input level of the recording deck. As you raise the level, tape compression is generated, which narrows the dynamic range and distorts the sound |
| **REC HI** | –6.0 to +6.0 dB | Adjusts the high range gain of the recording deck |
| **REC BIAS** | –1.00 to +1.00 | Adjusts the bias of the recording deck |
| **REPR DEC** | Swss70, Swss78, Swss85, Amer70 | Selects the playback deck type |
| **REPR LVL** | –96.0 to +18.0 dB | Adjusts the output level of the playback deck |
| **REPR HI** | –6.0 to +6.0 dB | Adjusts the high range gain of the playback deck |
| **REPR LO** | -6.0 to +6.0 dB | Adjusts the low range gain of the playback deck |
| **MAKE UP** | Off, On | When you adjust the REC LVL, the REPR LVL reflects the change, maintaining the relative output level. You can change the amount of distortion without changing the output level. |
| **TP SPEED** | 15ips, 30ips | Selects the tape speed |
| **TP KIND** | Old, New | Selects the tape type |

# Effects and tempo synchronization

Some of the M7CL's effects allow you to synchronize the effect with the tempo. There are two such types of effect; delay-type effects and modulation-type effects. For delay-type effects, the delay time will change according to the tempo. For modulation-type effects, the frequency of the modulation signal will change according to the tempo.

- **Parameters related to tempo synchronization**

The following five parameters are related to tempo synchronization.

1) SYNC 2) NOTE 3) TEMPO 4) DELAY 5) FREQ.

SYNC: ..... This is the on/off switch for tempo synchronization.

NOTE and TEMPO:..... These are the basic parameters for tempo synchronization.

DELAY and FREQ.: ..... DELAY is the delay time, and FREQ. is the frequency of the modulation signal. These directly affect the way in which the effect sound will change. DELAY is relevant only for delay-type effects, and FREQ. is relevant only for modulation-type effects.

- **How the parameters are related**

Tempo synchronization uses TEMPO and NOTE to calculate a value that will be the basis for the tempo, and continues making adjustments so that this tempo basis stays essentially the same as the DELAY (or FREQ.). This means that when TEMPO, NOTE, and DELAY (or FREQ.) are synchronized, and you change any of these values, the other parameters will be re-set in order to maintain the correct relationship. The parameters that are re-set and the calculation method(*a) used are as follows.

**If you turn SYNC on → NOTE will be set**

**If you edit DELAY (or FREQ.) → NOTE will be set**

In this case, the NOTE value is calculated as follows.

NOTE = DELAY (or FREQ.)/(4 x (60/TEMPO))

**If you edit NOTE → DELAY (or FREQ.) will be set**

In this case, the DELAY (or FREQ.) value is calculated as follows.

DELAY (or FREQ.) = NOTE x 4 x (60/TEMPO)

**If you edit TEMPO → DELAY (or FREQ.) will be set**

In this case, the DELAY (or FREQ.) value is calculated as follows.

DELAY (or FREQ.) = original DELAY (or FREQ.) x (previous TEMPO/new TEMPO)

Example 1: When SYNC=ON, DELAY=250 ms, TEMPO=120, you change NOTE from 8th note to quarter note

DELAY= new NOTE x 4 x (60/TEMPO)
= (1/4) x 4 x (60/120)
= 0.5 (sec)
= 500 ms

Thus, the DELAY will change from 250 ms to 500 ms.

Example 2: When SYNC=ON, DELAY=250 ms, NOTE=8th note, you change TEMPO from 120 to 121

DELAY= original DELAY x (previous TEMPO/new TEMPO)
= 250 x (120/121)
= 247.9 (ms)

Thus, the TEMPO will change from 250 ms to 247.9 ms.

*a Rounded values are used for the calculation results.

- **Ranges of the NOTE and TEMPO values**

The ranges of the NOTE and TEMPO values are limited by the ranges of the DELAY or FREQ. values. You cannot set NOTE or TEMPO values that would cause DELAY or FREQ. to exceed their maximum possible values when synchronized to tempo. This limitation also applies even when SYNC is OFF.

- **Special characteristics of the TEMPO parameter**

The TEMPO parameter has the following characteristics that are unlike other parameters.

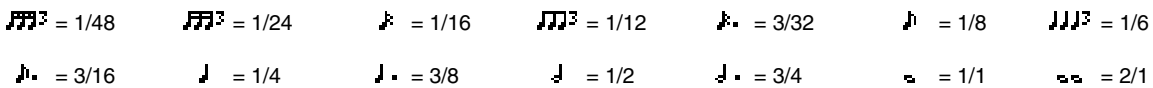
- It is a common value shared by all effects
- You cannot stored it to or recall it from the Effects Library. (You can store it to and recall it from a Scene.)

This means that the TEMPO value may not necessarily be the same when an effect is recalled as when that effect was stored. Here is an example.

Store the effect: TEMPO=120 → Change TEMPO to 60 → Recall the effect: TEMPO=60

Normally when you change the TEMPO, the DELAY (or FREQ.) will be re-set accordingly. However if the DELAY (or FREQ.) were changed, the effect would sound differently when recalled than when it was stored. To prevent the effect from changing in this way between store and recall, the M7CL does not update the DELAY (or FREQ.) value when an effect is recalled, even if the TEMPO is no longer the same as when that effect was stored.

* The NOTE parameter is calculated based on the following values.



# Scene Memory/Effect Library to Program Change Table

## ■ Preset Bank/Ch# 1

| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 001 | Scene | 001 |
| 002 | | 002 |
| 003 | | 003 |
| 004 | | 004 |
| 005 | | 005 |
| 006 | | 006 |
| 007 | | 007 |
| 008 | | 008 |
| 009 | | 009 |
| 010 | | 010 |
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| 063 | | 063 |
| 064 | | 064 |

| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 065 | Scene | 065 |
| 066 | | 066 |
| 067 | | 067 |
| 068 | | 068 |
| 069 | | 069 |
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| 102 | | 102 |
| 103 | | 103 |
| 104 | | 104 |
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| 106 | | 106 |
| 107 | | 107 |
| 108 | | 108 |
| 109 | | 109 |
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| 112 | | 112 |
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| 114 | | 114 |
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| 116 | | 116 |
| 117 | | 117 |
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| 124 | | 124 |
| 125 | | 125 |
| 126 | | 126 |
| 127 | | 127 |
| 128 | | 128 |

## ■ Preset Bank/Ch# 2

| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 001 | Scene | 129 |
| 002 | | 130 |
| 003 | | 131 |
| 004 | | 132 |
| 005 | | 133 |
| 006 | | 134 |
| 007 | | 135 |
| 008 | | 136 |
| 009 | | 137 |
| 010 | | 138 |
| 011 | | 139 |
| 012 | | 140 |
| 013 | | 141 |
| 014 | | 142 |
| 015 | | 143 |
| 016 | | 144 |
| 017 | | 145 |
| 018 | | 146 |
| 019 | | 147 |
| 020 | | 148 |
| 021 | | 149 |
| 022 | | 150 |
| 023 | | 151 |
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| 037 | | 165 |
| 038 | | 166 |
| 039 | | 167 |
| 040 | | 168 |
| 041 | | 169 |
| 042 | | 170 |
| 043 | | 171 |
| 044 | | 172 |
| 045 | | 173 |
| 046 | | 174 |
| 047 | | 175 |
| 048 | | 176 |
| 049 | | 177 |
| 050 | | 178 |
| 051 | | 179 |
| 052 | | 180 |
| 053 | | 181 |
| 054 | | 182 |
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| 058 | | 186 |
| 059 | | 187 |
| 060 | | 188 |
| 061 | | 189 |
| 062 | | 190 |
| 063 | | 191 |
| 064 | | 192 |

| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 065 | Scene | 193 |
| 066 | | 194 |
| 067 | | 195 |
| 068 | | 196 |
| 069 | | 197 |
| 070 | | 198 |
| 071 | | 199 |
| 072 | | 200 |
| 073 | | 201 |
| 074 | | 202 |
| 075 | | 203 |
| 076 | | 204 |
| 077 | | 205 |
| 078 | | 206 |
| 079 | | 207 |
| 080 | | 208 |
| 081 | | 209 |
| 082 | | 210 |
| 083 | | 211 |
| 084 | | 212 |
| 085 | | 213 |
| 086 | | 214 |
| 087 | | 215 |
| 088 | | 216 |
| 089 | | 217 |
| 090 | | 218 |
| 091 | | 219 |
| 092 | | 220 |
| 093 | | 221 |
| 094 | | 222 |
| 095 | | 223 |
| 096 | | 224 |
| 097 | | 225 |
| 098 | | 226 |
| 099 | | 227 |
| 100 | | 228 |
| 101 | | 229 |
| 102 | | 230 |
| 103 | | 231 |
| 104 | | 232 |
| 105 | | 233 |
| 106 | | 234 |
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| 112 | | 240 |
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| 114 | | 242 |
| 115 | | 243 |
| 116 | | 244 |
| 117 | | 245 |
| 118 | | 246 |
| 119 | | 247 |
| 120 | | 248 |
| 121 | | 249 |
| 122 | | 250 |
| 123 | | 251 |
| 124 | | 252 |
| 125 | | 253 |
| 126 | | 254 |
| 127 | | 255 |
| 128 | | 256 |

## ■ Preset Bank/Ch# 3

| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 001 | Scene | 257 |
| 002 | | 258 |
| 003 | | 259 |
| 004 | | 260 |
| 005 | | 261 |
| 006 | | 262 |
| 007 | | 263 |
| 008 | | 264 |
| 009 | | 265 |
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| 026 | | 282 |
| 027 | | 283 |
| 028 | | 284 |
| 029 | | 285 |
| 030 | | 286 |
| 031 | | 287 |
| 032 | | 288 |
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| 034 | | 290 |
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| 038 | | 294 |
| 039 | | 295 |
| 040 | | 296 |
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| 042 | | 298 |
| 043 | | 299 |
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| 045 | | 000 |
| 046 | No Assign | |
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| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 065 | No Assign | |
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| 127 | | |
| 128 | | |

## ■ Preset Bank/Ch# 4

| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| 004 | | |
| 005 | | |
| 006 | | |
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| Program Change# | Scene/ Effect | Preset# |
|---|---|---|
| 065 | No Assign | |
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| 124 | | |
| 125 | | |
| 126 | | |
| 127 | | |
| 128 | | |

## ■ Preset Bank/Ch# 5

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 6

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 7

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 8

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 9

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | RACK5 | 001 |
| 002 | | 002 |
| 003 | | 003 |
| : | | : |
| 128 | | 128 |

## ■ Preset Bank/Ch# 10

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | RACK6 | 001 |
| 002 | | 002 |
| 003 | | 003 |
| : | | : |
| 128 | | 128 |

## ■ Preset Bank/Ch# 11

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | RACK7 | 001 |
| 002 | | 002 |
| 003 | | 003 |
| : | | : |
| 128 | | 128 |

## ■ Preset Bank/Ch# 12

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | RACK8 | 001 |
| 002 | | 002 |
| 003 | | 003 |
| : | | : |
| 128 | | 128 |

## ■ Preset Bank/Ch# 13

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 14

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 15

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Preset Bank/Ch# 16

| Program Change# | Scene/Effect | Preset# |
|---|---|---|
| 001 | No Assign | |
| 002 | | |
| 003 | | |
| : | | |
| 128 | | |

## ■ Bank/Ch# _

| Program Change# | Scene/ Effect | User# |
|---|---|---|
| 001 | | |
| 002 | | |
| 003 | | |
| 004 | | |
| 005 | | |
| 006 | | |
| 007 | | |
| 008 | | |
| 009 | | |
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| Program Change# | Scene/ Effect | User# |
|---|---|---|
| 044 | | |
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| 084 | | |
| 085 | | |
| 086 | | |

| Program Change# | Scene/ Effect | User# |
|---|---|---|
| 087 | | |
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| 127 | | |
| 128 | | |

# Parameters that can be assigned to control changes

| Mode | Parameter 1 | Parameter 2 |
|---|---|---|
| NO ASSIGN | — | 0 |
| FADER H | INPUT | CH 1–CH 48<br>STIN1L–STIN4R |
| | OUTPUT | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8 STE-REO L–MONO(C) |
| FADER L | INPUT | CH 1–CH 48<br>STIN1L–STIN4R |
| | OUTPUT | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–MONO(C) |
| CH ON | INPUT | CH 1–CH 48<br>STIN1L–STIN4R |
| | OUTPUT | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–MONO(C) |
| PHASE | INPUT | CH 1–CH 48<br>STIN1L–STIN4R |
| INSERT | INPUT | CH 1–CH 48 |
| | OUTPUT | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–MONO(C) |
| DIRECT OUT | ON | CH 1–CH 48 |
| PAN/BALANCE | INPUT | CH 1–CH 48<br>STIN1L–STIN4R |
| BALANCE | OUTPUT | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–STEREO R |
| TO STEREO | ON | CH 1–CH 48<br>STIN1L–STIN4R |
| TO MONO | ON | CH 1–CH 48<br>STIN1L–STIN4R |
| LCR | ON | CH 1–CH 48<br>STIN1L–STIN4R<br>MIX 1–MIX 16 |
| | CSR | |
| MIX/MATRIX SEND | MIX 1 ON – MIX16 ON | CH 1–CH 48<br>STIN1L–STIN4R |
| | MATRIX 1 ON – MATRIX 8 ON | |
| | MIX 1 PRE/POST – MIX 16 PRE/POST | |
| | MATRIX 1 PRE/POST – MATRIX 8 PRE/POST | |
| | MIX 1 LEVEL H – MIX 16 LEVEL H | |
| | MIX 1 LEVEL L – MIX 16 LEVEL L | |
| | MATRIX 1 LEVEL H – MATRIX 8 LEVEL H | |
| | MATRIX 1 LEVEL L – MATRIX 8 LEVEL L | |
| | MIX 1/ 2 PAN – MIX 15/16 PAN | |
| | MATRIX1/2 PAN – MATRIX7/8 PAN | |
| MIX TO STEREO | TO STEREO ON | MIX 1–MIX 16 |
| | TO MONO ON | |
| | PAN | |
| MIX TO MATRIX | MATRIX 1 POINT – MATRIX 8 POINT | MIX 1–MIX 16 |
| | MATRIX 1 ON – MATRIX 8 ON | |
| | MATRIX 1 LEVEL H – MATRIX 8 LEVEL H | |
| | MATRIX 1 LEVEL L – MATRIX 8 LEVEL L | |
| | MATRIX 1/2 PAN – MATRIX 7/8 PAN | |

| Mode | Parameter 1 | Parameter 2 |
|---|---|---|
| STEREO TO MATRIX | MATRIX 1 POINT – MATRIX 8 POINT | STEREO L–MONO(C) |
| | MATRIX 1 ON – MATRIX 8 ON | |
| | MATRIX 1 LEVEL H – MATRIX 8 LEVEL H | |
| | MATRIX 1 LEVEL L – MATRIX 8 LEVEL L | |
| | MATRIX 1/2 PAN – MATRIX 7/8 PAN | |
| INPUT EQ | ON | CH 1–CH 48STIN1L–STIN4R |
| | LOW Q | |
| | LOW FREQ | |
| | LOW GAIN | |
| | LOW MID Q | |
| | LOW MID FREQ | |
| | LOW MID GAIN | |
| | HIGH MID Q | |
| | HIGH MID FREQ | |
| | HIGH MID GAIN | |
| | HIGH Q | |
| | HIGH FREQ | |
| | HIGH GAIN | |
| | LPF ON | |
| | LOW TYPE | |
| | HIGH TYPE | |
| INPUT ATT | INPUT | CH 1–CH 48<br>STIN1L–STIN4R |
| INPUT HPF | ON | CH 1–CH 48<br>STIN1L–STIN4R |
| | FREQ | |
| OUTPUT EQ | ON | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–MONO(C) |
| | LOW Q | |
| | LOW FREQ | |
| | LOW GAIN | |
| | LOW MID Q | |
| | LOW MID FREQ | |
| | LOW MID GAIN | |
| | HIGH MID Q | |
| | HIGH MID FREQ | |
| | HIGH MID GAIN | |
| | HIGH Q | |
| | HIGH FREQ | |
| | HIGH GAIN | |
| | LOW TYPE | |
| | HIGH TYPE | |
| | LOW HPF ON | |
| | HIGH LPF ON | |
| INPUT DYNAMICS1 | ON | CH 1–CH 48<br>STIN1L–STIN4R |
| | ATTACK | |
| | THRESHOLD | |
| | RANGE | |
| | HOLD H | |
| | HOLD L | |
| | DECAY/RELEASE H | |
| | DECAY/RELEASE L | |
| | RATIO | |
| | GAIN H | |
| | GAIN L | |
| | KNEE/WIDTH | |

| Mode | Parameter 1 | Parameter 2 |
|---|---|---|
| INPUT DYNAMICS2 | ON | CH 1–CH 48<br>STIN1L–STIN4R |
| | ATTACK | |
| | THRESHOLD | |
| | RELEASE H | |
| | RELEASE L | |
| | RATIO | |
| | GAIN H | |
| | GAIN L | |
| | KNEE/WIDTH | |
| | FILTER FREQ | |
| OUTPUT DYNAMICS1 | ON | MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–MONO(C) |
| | ATTACK | |
| | THRESHOLD | |
| | RELEASE H | |
| | RELEASE L | |
| | RATIO | |
| | GAIN H | |
| | GAIN L | |
| | KNEE/WIDTH | |
| EFFECT | BYPASS | RACK5–8 |
| | MIX BALANCE | |
| | PARAM 1 H – PARAM 32 L | |
| GEQ | ON A | RACK1–8 |
| | ON B | |
| | GAIN A 1 – GAIN A 31 | |
| | GAIN B 1 – GAIN B 31 | |
| DCA | ON | DCA 1–DCA 8 |
| | FADER H | |
| | FADER L | |
| MUTE MASTER | ON | MASTER 1–MASTER 8 |
| RECALL SAFE | ON | CH 1–CH 48<br>STIN1L–STIN4R<br>MIX 1–MIX 16<br>MATRIX 1–MATRIX 8<br>STEREO L–MONO(C)<br>RACK1–8DCA 1–DCA 8 |

# Control change parameter assignments

## ■ PRESET

| Control Change# | Mode | Parameter 1 | Parameter 2 |
|---|---|---|---|
| 1 | FADER H | INPUT | CH 1 |
| 2 | | | CH 2 |
| 3 | | | CH 3 |
| 4 | | | CH 4 |
| 5 | | | CH 5 |
| 6 | | | CH 6 |
| 7 | | | CH 7 |
| 8 | | | CH 8 |
| 9 | | | CH 9 |
| 10 | | | CH 10 |
| 11 | | | CH 11 |
| 12 | | | CH 12 |
| 13 | | | CH 13 |
| 14 | | | CH 14 |
| 15 | | | CH 15 |
| 16 | | | CH 16 |
| 17 | | | CH 17 |
| 18 | | | CH 18 |
| 19 | | | CH 19 |
| 20 | | | CH 20 |
| 21 | | | CH 21 |
| 22 | | | CH 22 |
| 23 | | | CH 23 |
| 24 | | | CH 24 |
| 25 | | DCA | DCA 1 |
| 26 | | | DCA 2 |
| 27 | | | DCA 3 |
| 28 | | | DCA 4 |
| 29 | | | DCA 5 |
| 30 | | | DCA 6 |
| 31 | | | DCA 7 |
| 33 | FADER L | INPUT | CH 1 |
| 34 | | | CH 2 |
| 35 | | | CH 3 |
| 36 | | | CH 4 |
| 37 | | | CH 5 |
| 38 | | | CH 6 |
| 39 | | | CH 7 |
| 40 | | | CH 8 |
| 41 | | | CH 9 |
| 42 | | | CH 10 |
| 43 | | | CH 11 |
| 44 | | | CH 12 |
| 45 | | | CH 13 |
| 46 | | | CH 14 |
| 47 | | | CH 15 |
| 48 | | | CH 16 |
| 49 | | | CH 17 |
| 50 | | | CH 18 |
| 51 | | | CH 19 |
| 52 | | | CH 20 |
| 53 | | | CH 21 |
| 54 | | | CH 22 |
| 55 | | | CH 23 |
| 56 | | | CH 24 |
| 57 | | DCA | DCA 1 |
| 58 | | | DCA 2 |
| 59 | | | DCA 3 |
| 60 | | | DCA 4 |
| 61 | | | DCA 5 |
| 62 | | | DCA 6 |
| 63 | | | DCA 7 |

| Control Change# | Mode | Parameter 1 | Parameter 2 |
|---|---|---|---|
| 64 | CH ON | INPUT | CH 1 |
| 65 | | | CH 2 |
| 66 | | | CH 3 |
| 67 | | | CH 4 |
| 68 | | | CH 5 |
| 69 | | | CH 6 |
| 70 | | | CH 7 |
| 71 | | | CH 8 |
| 72 | | | CH 9 |
| 73 | | | CH 10 |
| 74 | | | CH 11 |
| 75 | | | CH 12 |
| 76 | | | CH 13 |
| 77 | | | CH 14 |
| 78 | | | CH 15 |
| 79 | | | CH 16 |
| 80 | | | CH 17 |
| 81 | | | CH 18 |
| 82 | | | CH 19 |
| 83 | | | CH 20 |
| 84 | | | CH 21 |
| 85 | | | CH 22 |
| 86 | | | CH 23 |
| 87 | | | CH 24 |
| 88 | FADER H | DCA | DCA 8 |
| 89 | PAN/BALANCE | INPUT | CH 1 |
| 90 | | | CH 2 |
| 91 | | | CH 3 |
| 92 | | | CH 4 |
| 93 | | | CH 5 |
| 94 | | | CH 6 |
| 95 | | | CH 7 |
| 102 | | | CH 8 |
| 103 | | | CH 9 |
| 104 | | | CH 10 |
| 105 | | | CH 11 |
| 106 | | | CH 12 |
| 107 | | | CH 13 |
| 108 | | | CH 14 |
| 109 | | | CH 15 |
| 110 | | | CH 16 |
| 111 | | | CH 17 |
| 112 | | | CH 18 |
| 113 | | | CH 19 |
| 114 | | | CH 20 |
| 115 | | | CH 21 |
| 116 | | | CH 22 |
| 117 | | | CH 23 |
| 118 | | | CH 24 |
| 119 | FADER L | DCA | DCA 8 |

| Control Change# | Mode | Parameter 1 | Parameter 2 |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
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| 60 | | | |
| 61 | | | |
| 62 | | | |
| 63 | | | |
| 64 | | | |

| Control Change# | Mode | Parameter 1 | Parameter 2 |
|---|---|---|---|
| 65 | | | |
| 66 | | | |
| 67 | | | |
| 68 | | | |
| 69 | | | |
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| 115 | | | |
| 116 | | | |
| 117 | | | |
| 118 | | | |
| 119 | | | |

# NRPN parameter assignments

| Parameter | | From (HEX) | To (HEX) |
|---|---|---|---|
| FADER | INPUT | 0000 | 0037 |
| | MIX, MATRIX, STEREO LR | 0060 | 007D |
| INPUT to Mix9–16, Matrix1-4 LEVEL | MIX9 SEND | 007E | 00B5 |
| | MIX10 SEND | 00DE | 0115 |
| | MIX11 SEND | 013E | 0175 |
| | MIX12 SEND | 019E | 01D5 |
| | MIX13 SEND | 01FE | 0235 |
| | MIX14 SEND | 025E | 0295 |
| | MIX15 SEND | 02BE | 02F5 |
| | MIX16 SEND | 031E | 0355 |
| | INPUT TO MATRIX1 | 037E | 03B5 |
| | INPUT TO MATRIX2 | 03DE | 0415 |
| | INPUT TO MATRIX3 | 043E | 0475 |
| | INPUT TO MATRIX4 | 049E | 04D5 |
| MIX1–16, STEREO LR to MATRIX LEVEL | MATRIX1 SEND | 04FE | 0513 |
| | MATRIX2 SEND | 0514 | 0529 |
| | MATRIX3 SEND | 052A | 053F |
| | MATRIX4 SEND | 0540 | 0555 |
| | MATRIX5 SEND | 0556 | 056B |
| | MATRIX6 SEND | 056C | 0581 |
| | MATRIX7 SEND | 0582 | 0597 |
| | MATRIX8 SEND | 0598 | 05AD |
| ON | INPUT | 05B6 | 05ED |
| | MIX, MATRIX, STEREO LR | 0616 | 0633 |
| INPUT to Mix9–16, Matrix1–4 ON | MIX9 SEND | 0634 | 066B |
| | MIX10 SEND | 0694 | 06CB |
| | MIX11 SEND | 06F4 | 072B |
| | MIX12 SEND | 0754 | 078B |
| | MIX13 SEND | 07B4 | 07EB |
| | MIX14 SEND | 0814 | 084B |
| | MIX15 SEND | 0874 | 08AB |
| | MIX16 SEND | 08D4 | 090B |
| | INPUT TO MATRIX1 | 0934 | 096B |
| | INPUT TO MATRIX2 | 0994 | 09CB |
| | INPUT TO MATRIX3 | 09F4 | 0A2B |
| | INPUT TO MATRIX4 | 0A54 | 0A8B |
| MIX1–16, STEREO LR to MATRIX ON | MATRIX SEND | 0AB4 | 0AC9 |
| MIX1–8 to STEREO ON | MIX TO ST | 0B64 | 0B6B |
| PHASE | INPUT | 0B6C | 0BA3 |
| INSERT ON | INPUT | 0BCC | 0C03 |
| | MIX, MATRIX, STEREO LR | 0C2C | 0C49 |
| Input to Mix9–16, Matrix1–4 PRE/ POST | MIX9 SEND | 0C4A | 0C81 |
| | MIX10 SEND | 0CAA | 0CE1 |
| | MIX11 SEND | 0D0A | 0D41 |
| | MIX12 SEND | 0D6A | 0DA1 |
| | MIX13 SEND | 0DCA | 0E01 |
| | MIX14 SEND | 0E2A | 0E61 |
| | MIX15 SEND | 0E8A | 0EC1 |
| | MIX16 SEND | 0EEA | 0F21 |
| | INPUT TO MATRIX1 | 0F4A | 0F81 |
| | INPUT TO MATRIX2 | 0FAA | 0FE1 |
| | INPUT TO MATRIX3 | 100A | 1041 |
| | INPUT TO MATRIX4 | 106A | 10A1 |

| Parameter | | From (HEX) | To (HEX) |
|---|---|---|---|
| EQ INPUT, MIX, MATRIX, STEREO LR | ON | 1304 | 1381 |
| | LOW Q | 1382 | 13FF |
| | LOW FREQ | 1400 | 147D |
| | LOW GAIN | 147E | 14FB |
| | LOW MID Q | 14FC | 1579 |
| | LOW MID FREQ | 157A | 15F7 |
| | LOW MID GAIN | 15F8 | 1675 |
| | HIGH MID Q | 1676 | 16F3 |
| | HIGH MID FREQ | 16F4 | 1771 |
| | HIGH MID GAIN | 1772 | 17EF |
| | HIGH Q | 17F0 | 186D |
| | HIGH FREQ | 186E | 18EB |
| | HIGH GAIN | 18EC | 1969 |
| | ATT | 196A | 19A1 |
| | HPF ON | 19E8 | 1A65 |
| | LPF ON | 1A66 | 1AE3 |
| INPUT DYNAMICS1 | ON | 1AE4 | 1B1B |
| | ATTACK | 1B44 | 1B7B |
| | THRESHOLD | 1BA4 | 1BDB |
| | RANGE | 1C04 | 1C3B |
| | HOLD | 1C64 | 1C9B |
| | DECAY/RELEASE | 1CC4 | 1CFB |
| INPUT DYNAMICS2 MIX, MATRIX, STE-REO LR DYNAMICS1 | ON | 1D24 | 1DA1 |
| | ATTACK | 1DA2 | 1E1F |
| | THRESHOLD | 1E20 | 1E9D |
| | RELEASE | 1E9E | 1F1B |
| | RATIO | 1F1C | 1F99 |
| | GAIN | 1F9A | 2017 |
| | KNEE/WIDTH | 2018 | 2095 |
| PAN/BALANCE | INPUT | 2096 | 20CD |
| INPUT to Mix9/10–15/16, Matrix1/2, 3/4 PAN | MIX9–10 | 20F6 | 212D |
| | MIX11–12 | 2156 | 218D |
| | MIX13–14 | 21B6 | 21ED |
| | MIX15–16 | 2216 | 224D |
| | INPUT TO MATRIX1, 2 | 2276 | 22AD |
| | INPUT TO MATRIX3, 4 | 22D6 | 230D |
| MIX1-16, STEREO LR to MATRIX PAN | MATRIX1, 2 | 2336 | 234B |
| | MATRIX3, 4 | 234C | 2361 |
| | MATRIX5, 6 | 2362 | 2377 |
| | MATRIX7, 8 | 2378 | 238D |
| MIX1-8 to STEREO PAN | MIX TO ST | 238E | 2395 |
| BALANCE | MIX, MATRIX, STEREO LR | 2396 | 23B3 |

| Parameter | | From (HEX) | To (HEX) |
|---|---|---|---|
| RACK5–8 (EFFECT) | BYPASS | 26B4 | 26B7 |
| | MIX BALANCE | 26BC | 26BF |
| | PARAM1 | 26C4 | 26C7 |
| | PARAM2 | 26CC | 26CF |
| | PARAM3 | 26D4 | 26D7 |
| | PARAM4 | 26DC | 26DF |
| | PARAM5 | 26E4 | 26E7 |
| | PARAM6 | 26EC | 26EF |
| | PARAM7 | 26F4 | 26F7 |
| | PARAM8 | 26FC | 26FF |
| | PARAM9 | 2704 | 2707 |
| | PARAM10 | 270C | 270F |
| | PARAM11 | 2714 | 2717 |
| | PARAM12 | 271C | 271F |
| | PARAM13 | 2724 | 2727 |
| | PARAM14 | 272C | 272F |
| | PARAM15 | 2734 | 2737 |
| | PARAM16 | 273C | 273F |
| | PARAM17 | 2744 | 2747 |
| | PARAM18 | 274C | 274F |
| | PARAM19 | 2754 | 2757 |
| | PARAM20 | 275C | 275F |
| | PARAM21 | 2764 | 2767 |
| | PARAM22 | 276C | 276F |
| | PARAM23 | 2774 | 2777 |
| | PARAM24 | 277C | 277F |
| | PARAM25 | 2784 | 2787 |
| | PARAM26 | 278C | 278F |
| | PARAM27 | 2794 | 2797 |
| | PARAM28 | 279C | 279F |
| | PARAM29 | 27A4 | 27A7 |
| | PARAM30 | 27AC | 27AF |
| | PARAM31 | 27B4 | 27B7 |
| | PARAM32 | 27BC | 27BF |
| RACK1–3 (GEQ) | ON | 27C4 | 27C9 |
| | GAIN1 | 27CA | 27CF |
| | GAIN2 | 27D0 | 27D5 |
| | GAIN3 | 27D6 | 27DB |
| | GAIN4 | 27DC | 27E1 |
| | GAIN5 | 27E2 | 27E7 |
| | GAIN6 | 27E8 | 27ED |
| | GAIN7 | 27EE | 27F3 |
| | GAIN8 | 27F4 | 27F9 |
| | GAIN9 | 27FA | 27FF |
| | GAIN10 | 2800 | 2805 |
| | GAIN11 | 2806 | 280B |
| | GAIN12 | 280C | 2811 |
| | GAIN13 | 2812 | 2817 |
| | GAIN14 | 2818 | 281D |
| | GAIN15 | 281E | 2823 |
| | GAIN16 | 2824 | 2829 |
| | GAIN17 | 282A | 282F |
| | GAIN18 | 2830 | 2835 |
| | GAIN19 | 2836 | 283B |
| | GAIN20 | 283C | 2841 |
| | GAIN21 | 2842 | 2847 |
| | GAIN22 | 2848 | 284D |
| | GAIN23 | 284E | 2853 |
| | GAIN24 | 2854 | 2859 |
| | GAIN25 | 285A | 285F |
| | GAIN26 | 2860 | 2865 |
| | GAIN27 | 2866 | 286B |
| | GAIN28 | 286C | 2871 |
| | GAIN29 | 2872 | 2877 |
| | GAIN30 | 2878 | 287D |
| | GAIN31 | 287E | 2883 |
| FADER | MONO(C) | 28E4 | 28E8 |

| Parameter | | From (HEX) | To (HEX) |
|---|---|---|---|
| Input to Mix1–8, Matrix5–8 LEVEL | MIX1 SEND | 28EA | 2921 |
| | MIX2 SEND | 292A | 2961 |
| | MIX3 SEND | 296A | 29A1 |
| | MIX4 SEND | 29AA | 29E1 |
| | MIX5 SEND | 29EA | 2A21 |
| | MIX6 SEND | 2A2A | 2A61 |
| | MIX7 SEND | 2A6A | 2AA1 |
| | MIX8 SEND | 2AAA | 2AE1 |
| | INPUT TO MATRIX5 | 2AEA | 2B21 |
| | INPUT TO MATRIX6 | 2B2A | 2B61 |
| | INPUT TO MATRIX7 | 2B6A | 2BA1 |
| | INPUT TO MATRIX8 | 2BAA | 2BE1 |
| MONO(C) to Matrix LEVEL | MATRIX1 SEND | 2BEA | 2BEE |
| | MATRIX2 SEND | 2BF0 | 2BF4 |
| | MATRIX3 SEND | 2BF6 | 2BFA |
| | MATRIX4 SEND | 2BFC | 2C00 |
| | MATRIX5 SEND | 2C02 | 2C06 |
| | MATRIX6 SEND | 2C08 | 2C0C |
| | MATRIX7 SEND | 2C0E | 2C12 |
| | MATRIX8 SEND | 2C14 | 2C18 |
| ON | MONO(C) | 2C2A | 2C2E |
| Input to Mix1–8, Matrix5–8 ON | MIX1 SEND | 2C30 | 2C67 |
| | MIX2 SEND | 2C70 | 2CA7 |
| | MIX3 SEND | 2CB0 | 2CE7 |
| | MIX4 SEND | 2CF0 | 2D27 |
| | MIX5 SEND | 2D30 | 2D67 |
| | MIX6 SEND | 2D70 | 2DA7 |
| | MIX7 SEND | 2DB0 | 2DE7 |
| | MIX8 SEND | 2DF0 | 2E27 |
| | INPUT TO MATRIX5 | 2E30 | 2E67 |
| | INPUT TO MATRIX6 | 2E70 | 2EA7 |
| | INPUT TO MATRIX7 | 2EB0 | 2EE7 |
| | INPUT TO MATRIX8 | 2EF0 | 2F27 |
| MONO(C) to Matrix ON | MATRIX SEND | 2F30 | 2F34 |
| MIX9–16 to STEREO ON | MIX TO ST | 2F36 | 2F3D |
| INSERT | MONO(C) | 2F46 | 2F4A |
| Input to MIX1–8, MATRIX5–8 PRE/POST | MIX1 SEND | 2F4C | 2F83 |
| | MIX2 SEND | 2F8C | 2FC3 |
| | MIX3 SEND | 2FCC | 3003 |
| | MIX4 SEND | 300C | 3043 |
| | MIX5 SEND | 304C | 3083 |
| | MIX6 SEND | 308C | 30C3 |
| | MIX7 SEND | 30CC | 3103 |
| | MIX8 SEND | 310C | 3143 |
| | INPUT TO MATRIX5 | 314C | 3183 |
| | INPUT TO MATRIX6 | 318C | 31C3 |
| | INPUT TO MATRIX7 | 31CC | 3203 |
| | INPUT TO MATRIX8 | 320C | 3243 |
| MONO(C) EQ | ON | 325E | 3262 |
| | LOW Q | 3264 | 3268 |
| | LOW FREQ | 326A | 326E |
| | LOW GAIN | 3270 | 3274 |
| | LOW MID Q | 3276 | 327A |
| | LOW MID FREQ | 327C | 3280 |
| | LOW MID GAIN | 3282 | 3286 |
| | HIGH MID Q | 3288 | 328C |
| | HIGH MID FREQ | 328E | 3292 |
| | HIGH MID GAIN | 3294 | 3298 |
| | HIGH Q | 329A | 329E |
| | HIGH FREQ | 32A0 | 32A4 |
| | HIGH GAIN | 32A6 | 32AA |
| | HPF ON | 32AC | 32B0 |
| | LPF ON | 32B2 | 32B6 |
| INPUT EQ | LOW TYPE | 3440 | 3477 |
| INPUT EQ | HIGH TYPE | 3480 | 34B7 |
| MIX, MATRIX, STEREO LRC EQ | LOW TYPE | 34C0 | 34E2 |
| | HIGH TYPE | 34E4 | 3506 |

| Parameter | | From (HEX) | To (HEX) |
|---|---|---|---|
| INPUT HPF | FREQ | 3640 | 3677 |
| MONO(C) DYNAMICS1 | ON | 3680 | 3684 |
| | ATTACK | 3686 | 368A |
| | THRESHOLD | 368C | 3690 |
| | RELEASE | 3692 | 3696 |
| | RATIO | 3698 | 369C |
| | GAIN | 369E | 36A2 |
| | KNEE/WIDTH | 36A4 | 36A8 |
| INPUT to MIX1–8, Matrix5–8 PAN | MIX1–2 | 36AA | 36E1 |
| | MIX3–4 | 36EA | 3721 |
| | MIX5–6 | 372A | 3761 |
| | MIX7–8 | 376A | 37A1 |
| | INPUT TO MATRIX5, 6 | 37AA | 37E1 |
| | INPUT TO MATRIX7, 8 | 37EA | 3821 |
| MONO(C) to Matrix1–8 PAN | MATRIX1,2 | 382A | 382E |
| | MATRIX3, 4 | 3830 | 3834 |
| | MATRIX5, 6 | 3836 | 383A |
| | MATRIX7, 8 | 383C | 3840 |
| MIX9–16 to STEREO ON | MIX TO ST | 3842 | 3849 |
| RACK4–6 (GEQ) | ON | 3852 | 3857 |
| | GAIN1 | 3858 | 385D |
| | GAIN2 | 385E | 3863 |
| | GAIN3 | 3864 | 3869 |
| | GAIN4 | 386A | 386F |
| | GAIN5 | 3870 | 3875 |
| | GAIN6 | 3876 | 387B |
| | GAIN7 | 387C | 3881 |
| | GAIN8 | 3882 | 3887 |
| | GAIN9 | 3888 | 388D |
| | GAIN10 | 388E | 3893 |
| | GAIN11 | 3894 | 3899 |
| | GAIN12 | 389A | 389F |
| | GAIN13 | 38A0 | 38A5 |
| | GAIN14 | 38A6 | 38AB |
| | GAIN15 | 38AC | 38B1 |
| | GAIN16 | 38B2 | 38B7 |
| | GAIN17 | 38B8 | 38BD |
| | GAIN18 | 38BE | 38C3 |
| | GAIN19 | 38C4 | 38C9 |
| | GAIN20 | 38CA | 38CF |
| | GAIN21 | 38D0 | 38D5 |
| | GAIN22 | 38D6 | 38DB |
| | GAIN23 | 38DC | 38E1 |
| | GAIN24 | 38E2 | 38E7 |
| | GAIN25 | 38E8 | 38ED |
| | GAIN26 | 38EE | 38F3 |
| | GAIN27 | 38F4 | 38F9 |
| | GAIN28 | 38FA | 38FF |
| | GAIN29 | 3900 | 3905 |
| | GAIN30 | 3906 | 390B |
| | GAIN31 | 390C | 3911 |
| LCR IN, MIX | ON | 3912 | 3961 |
| | CSR | 396A | 39B9 |
| DIRECT OUT | ON | 39C2 | 39F9 |
| INPUT TO STEREO | ON | 3A02 | 3A39 |
| DCA | ON | 3A42 | 3A49 |
| | FADER | 3A4E | 3A55 |
| MUTE MASTER | ON | 3A5A | 3A61 |
| RECALL SAFE | ON | 3A66 | 3AEA |
| HA | GAIN1 | 3B06 | 3B15 |
| | GAIN2 | 3B16 | 3B25 |
| | GAIN3 | 3B26 | 3B35 |
| | GAIN4 | 3B36 | 3B45 |
| | GAIN5 | 3B46 | 3B55 |
| | GAIN6 | 3B56 | 3B65 |
| | GAIN7 | 3B66 | 3B75 |
| | GAIN8 | 3B76 | 3B85 |

| Parameter | | From (HEX) | To (HEX) |
|---|---|---|---|
| HA | +48v 1 | 3B86 | 3B95 |
| | +48v 2 | 3B96 | 3BA5 |
| | +48v 3 | 3BA6 | 3BB5 |
| | +48v 4 | 3BB6 | 3BC5 |
| | +48v 5 | 3BC6 | 3BD5 |
| | +48v 6 | 3BD6 | 3BE5 |
| | +48v 7 | 3BE6 | 3BF5 |
| | +48v 8 | 3BF6 | 3C05 |
| | HPF1 | 3C06 | 3C15 |
| | HPF2 | 3C16 | 3C25 |
| | HPF3 | 3C26 | 3C35 |
| | HPF4 | 3C36 | 3C45 |
| | HPF5 | 3C46 | 3C55 |
| | HPF6 | 3C56 | 3C65 |
| | HPF7 | 3C66 | 3C75 |
| | HPF8 | 3C76 | 3C85 |
| INPUT TO MONO | ON | 3C86 | 3CBD |
| MIX TO MONO | ON | 3CC6 | 3CD5 |
| SLOT OUT DELAY | ON | 3CD6 | 3D05 |
| | TIME HIGH | 3D06 | 3D35 |
| | TIME LOW | 3D36 | 3D65 |
| OMNI OUT DELAY | ON | 3D66 | 3D75 |
| | TIME HIGH | 3D76 | 3D85 |
| | TIME LOW | 3D86 | 3D95 |
| DIGITAL OUT DELAY | ON | 3D96 | 3D97 |
| | TIME HIGH | 3D98 | 3D99 |
| | TIME LOW | 3D9A | 3D9B |
| INPUT DYNAMICS1 | RATIO | 3D9C | 3DD3 |
| | KNEE/WIDTH | 3DD4 | 3E0B |
| | GAIN | 3E0C | 3E43 |
| INPUT DYNAMICS2 | HIGH ONLY/FULL | 3E44 | 3E7B |
| | FILTER FREQ | 3E7C | 3EB3 |
| RACK7–8 (GEQ) | ON | 3EB4 | 3EB7 |
| | GAIN1 | 3EB8 | 3EBB |
| | GAIN2 | 3EBC | 3EBF |
| | GAIN3 | 3EC0 | 3EC3 |
| | GAIN4 | 3EC4 | 3EC7 |
| | GAIN5 | 3EC8 | 3ECB |
| | GAIN6 | 3ECC | 3ECF |
| | GAIN7 | 3ED0 | 3ED3 |
| | GAIN8 | 3ED4 | 3ED7 |
| | GAIN9 | 3ED8 | 3EDB |
| | GAIN10 | 3EDC | 3EDF |
| | GAIN11 | 3EE0 | 3EE3 |
| | GAIN12 | 3EE4 | 3EE7 |
| | GAIN13 | 3EE8 | 3EEB |
| | GAIN14 | 3EEC | 3EEF |
| | GAIN15 | 3EF0 | 3EF3 |
| | GAIN16 | 3EF4 | 3EF7 |
| | GAIN17 | 3EF8 | 3EFB |
| | GAIN18 | 3EFC | 3EFF |
| | GAIN19 | 3F00 | 3F03 |
| | GAIN20 | 3F04 | 3F07 |
| | GAIN21 | 3F08 | 3F0B |
| | GAIN22 | 3F0C | 3F0F |
| | GAIN23 | 3F10 | 3F13 |
| | GAIN24 | 3F14 | 3F17 |
| | GAIN25 | 3F18 | 3F1B |
| | GAIN26 | 3F1C | 3F1F |
| | GAIN27 | 3F20 | 3F23 |
| | GAIN28 | 3F24 | 3F27 |
| | GAIN29 | 3F28 | 3F2B |
| | GAIN30 | 3F2C | 3F2F |
| | GAIN31 | 3F30 | 3F33 |
| EQ | ATT | 3F34 | 3F4E |

# Mixing parameter operation applicability

This table indicates which settings affect the behavior of each input channel and output channel parameter.
It also indicates whether or not they can be linked as stereo, and whether or not they are relevant to the RECALL SAFE, GLOBAL PASTE, and USER LEVEL settings, and a channel library.

## ■ Input channels

| Parameter | | Stereo *1 | CHANNEL LINK | RECALL SAFE | | GLOBAL PASTE | | USER LEVEL | Channel Library |
|---|---|---|---|---|---|---|---|---|---|
| | | | | ALL | Parameter Select button | ALL | Parameter Select button | | |
| HA | Gain | O | INPUT HA | O | INPUT HA | O | INPUT HA | INPUT HA | O |
| | +48V | | | O | INPUT HA | O | INPUT HA | INPUT HA | O |
| | Phase | | | O | INPUT HA | O | INPUT HA | INPUT HA | O |
| Name, Icon | | | | | INPUT NAME | | INPUT NAME | INPUT NAME | O |
| Input Patch | | | | O | INPUT PATCH *8 | | INPUT PORT PATCH | INPUT PATCH | |
| Insert | Out Patch | | | O | INPUT INSERT PATCH *8 | | OUTPUT PORT PATCH | INPUT PATCH | |
| | In Patch | | | O | INPUT INSERT PATCH *8 | | INPUT PORT PATCH | INPUT PATCH | |
| | +48V, Gain | | | O | INPUT INSERT PATCH | O | *5 | INPUT PROCESSING | |
| | On | | | O | INPUT INSERT | O | *5 | INPUT PROCESSING | O |
| | Point | | | O | INPUT INSERT | O | *5 | INPUT PROCESSING | O |
| Direct Out | Out Patch | | | O | INPUT DIRECT OUT *8 | | OUTPUT PORT PATCH | INPUT PATCH | |
| | On, Level | | | O | INPUT DIRECT OUT | O | *5 | INPUT PROCESSING | O |
| | Point | | | O | INPUT DIRECT OUT | O | *5 | INPUT PROCESSING | O |
| Att | | O | INPUT EQ | O | INPUT ATT | O | INPUT ATT | INPUT PROCESSING | O |
| HPF | | O | INPUT EQ | O | INPUT EQ | O | INPUT EQ | INPUT PROCESSING | O |
| EQ | | O | INPUT EQ | O | INPUT EQ | O | INPUT EQ | INPUT PROCESSING | O |
| Dynamics1 | Key-In Source | | | O | INPUT DYNA1 | O | INPUT DYNA1 | INPUT PROCESSING | |
| | Key-In Filter | O | INPUT DYNAMICS1 | O | INPUT DYNA1 | O | INPUT DYNA1 | INPUT PROCESSING | O |
| | Others | O | INPUT DYNAMICS1 | O | INPUT DYNA1 | O | INPUT DYNA1 | INPUT PROCESSING | O |
| Dynamics2 | Key-In Source | | | O | INPUT DYNA2 | O | INPUT DYNA2 | INPUT PROCESSING | |
| | Others | O | INPUT DYNAMICS2 | O | INPUT DYNA2 | O | INPUT DYNA2 | INPUT PROCESSING | O |
| To Mix | On | O | INPUT MIX ON *2 | O | INPUT MIX ON *7 | O | INPUT MIX ON *7 | INPUT FADER/ON *4 | O |
| | Level | O | INPUT MIX SEND *2 | O | INPUT MIX SEND *7 | O | INPUT MIX SEND *7 | INPUT FADER/ON *4 | O |
| | Pan/Balance | O | | O | INPUT MIX SEND *7 | O | INPUT MIX SEND *7 | INPUT FADER/ON *4 | O |
| | Pre/Post | O | INPUT MIX SEND *2 | O | INPUT MIX SEND *7 | O | INPUT MIX SEND *7 | INPUT PROCESSING *4 | O |
| To Matrix | On | O | INPUT MATRIX ON *3 | O | INPUT MATRIX ON *7 | O | INPUT MATRIX ON *7 | INPUT FADER/ON *4 | O |
| | Level | O | INPUT MATRIX SEND *3 | O | INPUT MATRIX SEND *7 | O | INPUT MATRIX SEND *7 | INPUT FADER/ON *4 | O |
| | Pan/Balance | O | | O | INPUT MATRIX SEND *7 | O | INPUT MATRIX SEND *7 | INPUT FADER/ON *4 | O |
| | Pre/Post | O | INPUT MATRIX SEND *3 | O | INPUT MATRIX SEND *7 | O | INPUT MATRIX SEND *7 | INPUT PROCESSING *4 | O |
| To Stereo/ Mono | | O | | O | *5 | O | *5 | INPUT PROCESSING | O |
| Pan/ Balance | | O | | O | *5 | O | *5 | INPUT FADER/ON | O |
| LCR | On | O | | O | *5 | O | *5 | INPUT PROCESSING | O |
| | CSR | O | | O | *5 | O | *5 | INPUT PROCESSING | O |
| On | | O | INPUT ON | O | INPUT ON | O | INPUT ON | INPUT FADER/ON | O |
| Fader | | O | INPUT FADER | O | INPUT FADER | O | INPUT FADER | INPUT FADER/ON | O |
| Mute Assign | | O | | O | *5 | O | *5 | MUTE GROUP ASSIGN | O |
| DCA Assign | | O | | O | *5 | O | *5 | DCA GROUP ASSIGN | O |
| Cue | | O | | | | | | | |
| Key In Cue | | | | | | | | | |
| Mute Safe | | O | | | | | | | |
| Recall Safe | | O | | | | | | | |
| Fade Time, On | | O *6 | | | | O *6 | *5 | STORE | O *6 |

*1 These parameters can be linked between L and R of ST IN channels 1–4.
*2 Applies to parameters for which the MIX channel 1–16 individual Send Parameter setting and the item in the table are both enabled.
*3 Applies to parameters for which the MATRIX channel 1–8 individual Send Parameter setting and the item in the table are both enabled.
*4 These parameters are available if "FADER/ON" or "PROCESSING" for the Send source channel is set to ON. At that time, "WITH SEND" for the Send destination channel must also be set to ON.
*5 Applicable to parameters that function only when ALL is selected.
*6 Applicable only to On/Off.
*7 Valid when they are set for either the Send source channel or Send destination channel.
*8 Also applicable when INPUT PATCH for GLOBAL RECALL SAFE is set to ON.

## ■ MIX Channels

| Parameter | | Linked for a stereo pair | RECALL SAFE | | GLOBAL PASTE | | USER LEVEL | Channel Library |
|---|---|---|---|---|---|---|---|---|
| | | | ALL | Parameter Select button | ALL | Parameter Select button | | |
| Name, Icon | | | | OUTPUT NAME | | OUTPUT NAME | OUTPUT NAME | O |
| Output Patch | | | O | MIX OUTPUT PATCH *9 | | OUTPUT PORT PATCH | OUTPUT PATCH | |
| Insert | Out Patch | | O | MIX INSERT PATCH *9 | | OUTPUT PORT PATCH | OUTPUT PATCH | |
| | In Patch | | O | MIX INSERT PATCH *9 | | INPUT PORT PATCH | OUTPUT PATCH | |
| | +48V, Gain | | O | MIX INSERT PATCH | O | *5 | MIX PROCESSING | |
| | On | O | O | MIX INSERT | O | *5 | MIX PROCESSING | O |
| | Point | O | O | MIX INSERT | O | *5 | MIX PROCESSING | O |
| Att | | O | O | MIX ATT | O | OUTPUT ATT | MIX PROCESSING | O |
| EQ | | O | O | MIX EQ | O | OUTPUT EQ | MIX PROCESSING | O |
| Dynamics1 | Key-In Source | | O | MIX DYNA1 | O | OUTPUT DYNA1 | MIX PROCESSING | |
| | Others | O | O | MIX DYNA1 | O | OUTPUT DYNA1 | MIX PROCESSING | O |
| To Matrix | On | O | O | MIX to MATRIX ON *7 | O | to MATRIX ON *7 | MIX FADER/ON *4 | O |
| | Level | O *10 | O | MIX to MATRIX SEND *7 | O | to MATRIX SEND *7 | MIX FADER/ON *4 | O |
| | Pan/Balance | O | O | MIX to MATRIX SEND *7 | O | to MATRIX SEND *7 | MIX FADER/ON *4 | O |
| | Pre/Post | O | O | MIX to MATRIX SEND *7 | O | to MATRIX SEND *7 | MIX PROCESSING *4 | O |
| To Stereo/Mono | | O | O | *5 | O | *5 | MIX PROCESSING | O |
| Pan/Balance | | O | O | *5 | O | *5 | MIX FADER/ON | O |
| LCR | On | O | O | *5 | O | *5 | MIX PROCESSING | O |
| | CSR | O | O | *5 | O | *5 | MIX PROCESSING | O |
| On | | O | O | MIX ON | O | OUTPUT ON | MIX FADER/ON | O |
| Fader | | O | O | MIX FADER | O | OUTPUT FADER | MIX FADER/ON | O |
| From Input | On | | | WITH MIX SEND | | WITH SEND FROM SOURCE CHs | WITH MIX SEND *4 | |
| | Level | | | WITH MIX SEND | | WITH SEND FROM SOURCE CHs | WITH MIX SEND *4 | |
| | Pan | | | WITH MIX SEND | | WITH SEND FROM SOURCE CHs | WITH MIX SEND *4 | |
| | Pre/Post | | | WITH MIX SEND | | WITH SEND FROM SOURCE CHs | WITH MIX SEND *4 | |
| Mute Assign | | O | O | *5 | O | *5 | MUTE ASSIGN | O |
| Cue | | O | | | | | | |
| Mute Safe | | O | | | | | | |
| Recall Safe | | O | | | | | | |
| Fade Time, On | | O *6 | | | O *6 | *5 | STORE | O *6 |

*4 These parameters are available if "FADER/ON" or "PROCESSING" for the Send source channel is set to ON. At that time, "WITH SEND" for the Send destination channel must also be set to ON.
*5 Applicable to parameters that function only when ALL is selected.
*6 Applicable only to On/Off.
*7 Valid when they are set for either the Send source channel or Send destination channel.
*9 Also applicable when OUTPUT PATCH for GLOBAL RECALL SAFE is set to ON.
*10 Linked if the send-destination channel is Stereo.

## ■ MATRIX Channels

| Parameter | | Linked for a stereo pair | RECALL SAFE | | GLOBAL PASTE | | USER LEVEL | Channel Library |
|---|---|---|---|---|---|---|---|---|
| | | | ALL | Parameter Select button | ALL | Parameter Select button | | |
| Name, Icon | | | | OUTPUT NAME | | OUTPUT NAME | OUTPUT NAME | O |
| Output Patch | | | O | MATRIX OUTPUT PATCH *9 | | OUTPUT PORT PATCH | OUTPUT PATCH | |
| Insert | Out Patch | | O | MATRIX INSERT PATCH *9 | | OUTPUT PORT PATCH | OUTPUT PATCH | |
| | In Patch | | O | MATRIX INSERT PATCH *9 | | INPUT PORT PATCH | OUTPUT PATCH | |
| | +48V, Gain | | O | MATRIX INSERT PATCH | O | *5 | MATRIX PROCESSING | |
| | On | O | O | MATRIX INSERT | O | *5 | MATRIX PROCESSING | O |
| | Point | O | O | MATRIX INSERT | O | *5 | MATRIX PROCESSING | O |
| Att | | O | O | MATRIX ATT | O | OUTPUT ATT | MATRIX PROCESSING | O |
| EQ | | O | O | MATRIX EQ | O | OUTPUT EQ | MATRIX PROCESSING | O |
| Dynamics1 | Key-In Source | | O | MATRIX DYNA1 | O | OUTPUT DYNA1 | MATRIX PROCESSING | |
| | Others | O | O | MATRIX DYNA1 | O | OUTPUT DYNA1 | MATRIX PROCESSING | O |
| Balance | | O | O | *5 | O | *5 | MATRIX FADER/ON | O |
| On | | O | O | MATRIX ON | O | OUTPUT ON | MATRIX FADER/ON | O |
| Fader | | O | O | MATRIX FADER | O | OUTPUT FADER | MATRIX FADER/ON | O |
| From Input<br>From Mix<br>From Stereo/Mono | On | | | WITH MATRIX SEND | | WITH SEND FROM SOURCE CHs | WITH MATRIX SEND *4 | |
| | Level | | | WITH MATRIX SEND | | WITH SEND FROM SOURCE CHs | WITH MATRIX SEND *4 | |
| | Pan | | | WITH MATRIX SEND | | WITH SEND FROM SOURCE CHs | WITH MATRIX SEND *4 | |
| | Pre/Post | | | WITH MATRIX SEND | | WITH SEND FROM SOURCE CHs | WITH MATRIX SEND *4 | |
| Mute Assign | | O | O | *5 | O | *5 | MUTE ASSIGN | O |
| Cue | | O | | | | | | |
| Mute Safe | | O | | | | | | |
| Recall Safe | | O | | | | | | |
| Fade Time, On | | O *6 | | | O *6 | *5 | STORE | O *6 |

*4 These parameters are available if "FADER/ON" or "PROCESSING" for the Send source channel is set to ON. At that time, "WITH SEND" for the Send destination channel must also be set to ON.
*5 Applicable to parameters that function only when ALL is selected.
*6 Applicable only to On/Off
*9 Also applicable when OUTPUT PATCH for GLOBAL RECALL SAFE is set to ON.

## ■ STEREO, MONO Channels

| Parameter | | STEREO CH link | RECALL SAFE | | GLOBAL PASTE | | USER LEVEL | Channel Library |
|---|---|---|---|---|---|---|---|---|
| | | | ALL | Parameter Select button | ALL | Parameter Select button | | |
| Name, Icon | | | | OUTPUT NAME | | OUTPUT NAME | OUTPUT NAME | O |
| Output Patch | | | O | STEREO, MONO OUTPUT PATCH *9 | | OUTPUT PORT PATCH | OUTPUT PATCH | |
| Insert | Out Patch | | O | STEREO, MONO INSERT PATCH *9 | | OUTPUT PORT PATCH | OUTPUT PATCH | |
| | In Patch | | O | STEREO, MONO INSERT PATCH *9 | | INPUT PORT PATCH | OUTPUT PATCH | |
| | +48V, Gain | | O | STEREO, MONO INSERT PATCH | O | *5 | STEREO, MONO PROCESSING | |
| | On | O | O | STEREO, MONO INSERT | O | *5 | STEREO, MONO PROCESSING | O |
| | Point | O | O | STEREO, MONO INSERT | O | *5 | STEREO, MONO PROCESSING | O |
| Att | | O | O | STEREO, MONO ATT | O | OUTPUT ATT | STEREO, MONO PROCESSING | O |
| EQ | | O | O | STEREO, MONO EQ | O | OUTPUT EQ | STEREO, MONO PROCESSING | O |
| Dynamics1 | Key-In Source | | O | STEREO, MONO DYNA1 | O | OUTPUT DYNA1 | STEREO, MONO PROCESSING | |
| | Others | O | O | STEREO, MONO DYNA1 | O | OUTPUT DYNA1 | STEREO, MONO PROCESSING | O |
| To Matrix | On | O | O | STEREO, MONO to MATRIX ON *7 | O | to MATRIX ON *7 | STEREO, MONO FADER/ON *4 | O |
| | Level | O *10 | O | STEREO, MONO to MATRIX SEND *7 | O | to MATRIX SEND *7 | STEREO, MONO FADER/ON *4 | O |
| | Pan/Balance | O | O | STEREO, MONO to MATRIX SEND *7 | O | to MATRIX SEND *7 | STEREO, MONO FADER/ON *4 | O |
| | Pre/Post | O | O | STEREO, MONO to MATRIX SEND *7 | O | to MATRIX SEND *7 | STEREO, MONO PROCESSING *4 | O |
| Balance | | O | O | *5 | O | *5 | STEREO, MONO FADER/ON | O |
| On | | O | O | STEREO, MONO ON | O | OUTPUT ON | STEREO, MONO FADER/ON | O |
| Fader | | O | O | STEREO, MONO FADER | O | OUTPUT FADER | STEREO, MONO FADER/ON | O |
| Mute Assign | | O | O | *5 | O | *5 | MUTE ASSIGN | O |
| Cue | | O | | | | | | |
| Mute Safe | | O | | | | | | |
| Recall Safe | | O | | | | | | |
| Fade Time, On | | O *6 | | | O *6 | *5 | STORE | O *6 |

*4 These parameters are available if "FADER/ON" or "PROCESSING" for the Send source channel is set to ON. At that time, "WITH SEND" for the Send destination channel must also be set to ON.
*5 Applicable to parameters that function only when ALL is selected.
*6 Applicable only to On/Off.
*7 Valid when they are set for either the Send source channel or Send destination channel.
*9 Also applicable when OUTPUT PATCH for GLOBAL RECALL SAFE is set to ON.
*10 Linked if the send-destination channel is Stereo.

## ■ DCA

| Parameter | | RECALL SAFE | GLOBAL PASTE | USER LEVEL | |
|---|---|---|---|---|---|
| Name, Icon | | DCA ALL | | DCA MASTER ON | |
| On | | DCA LEVEL/ON | | DCA MASTER ON | |
| Fader | | DCA LEVEL/ON | | DCA MASTER ON | |
| Fade Time, On | | | | STORE | |

# Functions that can be assigned to user-defined keys

| FUNCTION | PARAMETER 1 | PARAMETER 2 | Explanation |
|---|---|---|---|
| NO ASSIGN | — | — | No assignment. |
| SCENE | INC RECALL | — | Recall the scene of the next existing number. |
| | DEC RECALL | — | Recall the scene of the previous existing number. |
| | DIRECT RECALL | SCENE #000–#300 | Directly recall the scene of the specified number. |
| | RECALL UNDO | — | Execute RECALL UNDO. |
| | STORE UNDO | — | Execute STORE UNDO. |
| TALKBACK | TALKBACK ON | LATCH | Switch TALKBACK on/off. |
| | | UNLATCH | Turn TALKBACK on while pressed. |
| | SELECTED CH ASSIGN | — | While holding down this key, press a SEL key of an OUTPUT channel to switch the assignment on/off. During this time, the [SEL] LED will be lit if assign is ON, or dark if OFF.<br>The assignment setting made while holding down this key will be stored. Pressing the key again will recall the stored setting. Settings can be stored in multiple keys to facilitate rapid assignment switching. |
| OSCILLATOR | OSCILLATOR ON | — | Switch the OSC on/off. |
| | SELECTED CH ASSIGN | — | While holding down this key, press a SEL key of an OUTPUT channel to switch the assignment on/off. During this time, the [SEL] LED will be lit if assign is ON, or dark if OFF. |
| CUE CLEAR | — | — | Clear all CUE settings together. |
| MONITOR | MONITOR ON | — | Switch MONITOR on/off. |
| | SELECTED CH ASSIGN | — | While holding down this key, press the SEL key of a MIX or MATRIX channel to switch the assignment on/off. During this time, the [SEL] LED will be lit if assign is ON, or dark if OFF.<br>The assignment setting made while holding down this key will be stored. Pressing the key again will recall the stored setting. Settings can be stored in multiple keys to facilitate rapid assignment switching. |
| | SOURCE SELECT | (M7CL-32/48)<br>STEREO L/R, MONO(C), LCR, STIN1–4, DEFINE | Recall the selected signal to the monitor. |
| | | (M7CL-48ES)<br>STEREO L/R, MONO(C), LCR, OMNI1–8, DEFINE | |
| | DIMMER ON | — | Switch the monitor dimmer function on/off. |
| | MONO MONITOR | — | Switch MONO MONITOR on/off. |
| EFFECT BYPASS | RACK 5–8 | — | Bypass the specified effect. |
| TAP TEMPO | CURRENT PAGE | — | Use the tap tempo function in the displayed screen. |
| | RACK 5–8 | — | Use the tap tempo function for the specified effect. |
| MUTE MASTER | MUTE GROUP 1–8 | — | Switch MUTE GROUP MASTER on/off. |
| METER | PEAK HOLD ON | — | Turn the meter PEAK HOLD function on/off. |
| BRIGHTNESS | BANK CHANGE | — | Toggle between the brightness settings stored in A and B. |
| PAGE CHANGE | PAGE BOOKMARK | — | Memorize the currently selected screen (hold down the key for two seconds or longer), or display the last-memorized screen (press and release the key within two seconds). Popup screens can also be memorized. In the case of a rack, the number of that rack is also memorized. |
| | CLOSE POPUP | — | Close the displayed popup window. |
| CH SELECT | INC, DEC | — | Decrement the channel selection. |
| SEND ENCODER | TO MIX/TO MATRIX | — | If INPUT or ST IN is selected, swich the function of the Selected Channel section's send encoders from TO MIX/TO MATRIX. |
| SET BY SEL | SET [+48V] | — | Hold down this key and press SEL to switch it on/off.<br>During this time, the [SEL] LED will be lit if on or dark if off.<br>If SET [PRE SEND] is selected, "SEND ON FADER" mode is engaged while you are holding down the [SEL] key. |
| | SET [Ø] | — | |
| | SET [INSERT ON] | — | |
| | SET [DIRECT OUT ON] | — | |
| | SET [PRE SEND] | — | |
| | SET [TO STEREO] | — | |
| | SET [TO MONO] | — | |
| | SET [TO LCR] | — | |

| FUNCTION | PARAMETER 1 | PARAMETER 2 | Explanation |
|---|---|---|---|
| SET DEFAULT VALUE | — | — | While holding down this key, push an encoder of the Selected Channel or Centralogic section to reset it to the default value. |
| SET NOMINAL LEVEL | — | — | While holding down this key, press a [SEL] key to set the fader of that channel to nominal level. |
| SENDS ON FADER | MIX1–8 | — | Switches the MIX ON FADER function for the selected MIX on and off. |
| | MATRIX1–8 | — | Switches the MATRIX ON FADER function for the selected MATRIX on and off. |
| | MIX ON FADER | — | Switches the MIX ON FADER function on and off. |
| | MATRIX ON FADER | — | Switches the MATRIX ON FADER function on and off. |
| | SENDS ON FADER | — | Switches the SENDS ON FADER function on and off. |
| M7CL EDITOR CONTROL | MASTER | — | Access the M7CL EDITOR screen. |
| | OVERVIEW | CH1–16, 17–32, 33–48, ST IN, MIX, MATRIX, ST/MONO, DCA | |
| | SELECTED CHANNEL | — | |
| | LIBRARY | DYNAMICS LIBRARY, INPUT EQ LIBRARY, OUTPUT EQ LIBRARY, EFFECT LIBRARY, GEQ LIBRARY, INPUT CH LIBRARY, OUTPUT CH LIBRARY | |
| | PATCH EDITOR | INPUT PATCH, OUTPUT PATCH, INPUT INSERT PATCH, OUTPUT INSERT PATCH,DIRECT OUT PATCH, PATCH LIST | |
| | RACK EDITOR | RACK, RACK1–8 | |
| | METER | INPUT METER, OUTPUT METER | |
| | GROUP/LINK | DCA GROUP, MUTE GROUP, CHANNEL LINK | |
| | SCENE | SCENE MEMORY, RECALL SAFE, FADE TIME | |
| | PARAMETER1 | SENDS ON FADER | |
| | PARAMETER2 | — | |
| HELP | — | — | Opens and closes the HELP pop-up window. Operating the controllers on the panel (excluding faders), or controllers on the screen, while holding down this key will display the related information. |
| MONITOR ON MASTER (FADER ASSIGN MODE) | STEREO MASTER | LATCH | The key will switch whether the STEREO MASTER fader will be used to control the monitor level. |
| | | UNLATCH | The STEREO MASTER fader will be used to control the monitor level while the key is held down. |
| | MONO MASTER | LATCH | The key will switch whether the MONO MASTER fader will be used to control the monitor level. |
| | | UNLATCH | The MONO MASTER fader will be used to control the monitor level while the key is held down. |
| HOME | SELECTED CH VIEW | — | Displays the SELECTED CHANNEL VIEW screen. |
| | OVERVIEW | — | Displays the OVERVIEW screen. |
| | MOMENTARY | — | Each press of the key will alternately display the SELECTED CHANNEL VIEW screen and the OVERVIEW screen. |

# MIDI Data Format

This section explains the format of the data that the M7CL is able to understand, send, and receive.

## 1 CHANNEL MESSAGE

### 1.1 NOTE OFF (8n)

**Reception**

These messages are echoed to MIDI OUT if [OTHER ECHO] is ON.
They are received if [Rx CH] matches, and used to control effects.

| | | | |
|---|---|---|---|
| STATUS | 1000nnnn | 8n | Note off message |
| DATA | 0nnnnnnn | nn | Note number |
| | 0vvvvvvv | vv | Velocity (ignored) |

### 1.2 NOTE ON (9n)

**Reception**

These messages are echoed to MIDI OUT if [OTHER ECHO] is ON.
They are received if [Rx CH] matches, and used to control effects.

| | | | |
|---|---|---|---|
| STATUS | 1001nnnn | 9n | Note on message |
| DATA | 0nnnnnnn | nn | Note number |
| | 0vvvvvvv | vv | Velocity (1-127:on, 0:off) |

### 1.3 CONTROL CHANGE (Bn)

Two types of control change can be transmitted and received; [NRPN] (Non-Registered Parameter Numbers) and freely-assigned [TABLE] (1CH x 110) messages. Select either [TABLE] or [NRPN].

**Reception**

These messages are echoed to MIDI OUT if [Control Change ECHO] is ON.
If [TABLE] is selected, these messages are received when [Control Change Rx] is ON and [Rx CH] matches, and will control parameters according to the settings of the [Control assign table]. For the parameters that can be assigned, refer to "Parameters that can be assigned to control changes" on page 270.
If [NRPN] is selected, these messages are received when [Control Change Rx] is ON and the [Rx CH] matches; the four messages NRPN control number (62h, 63h) and DATA ENTRY control number (06h, 26h) are used to control the specified parameter.

**Transmission**

If [TABLE] is selected, and if [Control Change Tx] is ON when you operate a parameter that is assigned in the [Control assign table], these messages will be transmitted on the [Tx CH] channel. For the parameters that can be assigned, refer to "Parameters that can be assigned to control changes" on page 270.
If [NRPN] is selected, and if [Control Change Tx] is ON when you operate a specified parameter, the four messages NRPN control number (62h, 63h) and DATA ENTRY control number (06h, 26h) are transmitted on the [Tx CH] channel. For the parameters that can be assigned, refer to "Parameters that can be assigned to control changes" on page 270.
Control Change messages are not used for transmission to M7CL Editor because there is no guarantee that the contents of the assignment tables will match. (Parameter Change messages are always used.)
Control Change numbers 0 and 32 are for selecting banks.

| | | | |
|---|---|---|---|
| STATUS | 1011nnnn | Bn | Control change |
| DATA | | 00 | Control number (00) |
| | 0vvvvvvv | vv | Control Value (0-127) |
| STATUS | 1011nnnn | Bn | Control change |
| DATA | | 20 | Control number (32) |
| | 0vvvvvvv | vv | Control Value (0-127) |

**If [TABLE] is selected**

| | | | |
|---|---|---|---|
| STATUS | 1011nnnn | Bn | Control change |
| DATA | 0nnnnnnn | nn | Control number (1-5, 7-31, 33-37, 38-95, 102-119) * |
| | 0vvvvvvv | vv | Control Value (0-127) |

* Numbers 0, 32, and 96–101 cannot be used.
* Control number 6, 38 can be used.

**Equation for converting a Control Value to parameter data**

paramSteps = paramMax - paramMin + 1;
add = paramWidth / paramSteps;
mod = paramWidth - add * paramSteps;
curValue = paramSteps * add + mod / 2;

**(1) If the assigned parameter has fewer than 128 steps**

paramWidth = 128; rxValue = Control value;

**(2) If the assigned parameter has 128 or more but less than 16,384 steps**

paramWidth = 16384;

(2-1) When High and Low data is received
rxValue = Control value (High) * 128 + Control value (Low);

(2-2) When only Low data is received
rxValue = (curValue & 16256) + Control value (Low);

(2-3) When only High data is received
rxValue = Control value (High) * 128 + (curValue & 127);

**(3) If the assigned parameter has 16,384 or more but less than 2,097,152 steps**

paramWidth = 2097152;

(3-1) When High, Middle, and Low data is received
rxValue = Control value (High) * 16384 + Control value (Middle) * 128 + Control value (Low);

(3-2) When only Low data is received
rxValue = (curValue & 2097024) + Control value (Low);

(3-3) When only Middle data is received
rxValue = (curValue & 2080895) + Control value (Middle) * 128;

(3-4) When only High data is received
rxValue = (curValue & 16383) + Control value (High) * 16384;

(3-5) When only Middle and Low data is received
rxValue = (curValue & 2080768) + Control value (Middle) * 128 + Control value (Low);

(3-6) When only High and Low data is received
rxValue = (curValue & 16256) + Control value (High) * 16384 + Control value (Low);

(3-7) When only High and Middle data is received
rxValue = (curValue & 127) + Control value (High) * 16384 + Control value (Middle) * 128;

```
if ( rxValue > paramWidth)
rxValue = paramWidth;
param = ( rxValue - mod / 2) / add;
```

**If [NRPN] is selected**

| | | | |
|---|---|---|---|
| STATUS | 1011nnnn | Bn | Control change |
| DATA | 01100010 | 62 | NRPN LSB |
| | 0vvvvvvv | vv | Parameter number LSB |
| STATUS | 1011nnnn | Bn | Control change * |
| DATA | 01100011 | 63 | NRPN MSB |
| | 0vvvvvvv | vv | Parameter number MSB |
| STATUS | 1011nnnn | Bn | Control change * |
| DATA | 00000110 | 06 | Data entry MSB |
| | 0vvvvvvv | vv | Parameter data MSB |
| STATUS | 1011nnnn | Bn | Control change * |
| DATA | 00100110 | 26 | Data entry LSB |
| | 0vvvvvvv | vv | Parameter data LSB |

* The STATUS byte of the second and subsequent messages need not be added during transmission. Reception must occur correctly whether or not the status byte is omitted.

### 1.4 PROGRAM CHANGE (Cn)

**Reception**

If [Program Change ECHO] is ON, bank select messages will also be echoed from MIDI OUT.
If SINGLE CH is selected, these messages are received if [Program Change RX] is ON and the [Rx CH] matches. However if [OMNI] is ON, these messages are received regardless of the channel. When these messages are received, scene memory and effect library are recalled according to the settings of the [Program Change Table].

**Transmission**

If [Program Change TX] is ON, these messages are transmitted according to the [Program Change Table] settings when scene memory and effect library are recalled.
If SINGLE CH is selected, these messages are transmitted on the [Tx CH] channel.
If the recalled scene memory and effect library has been assigned to more than one program number, the lowest-numbered program number for each MIDI channel will be transmitted.
Program Change messages are not used for transmission to M7CL Editor because there is no guarantee that the contents of the assignment tables will match. (Parameter Change messages are always used.)
You can choose either MULTI MIDI CH or SINGLE CH.

**If SINGLE is selected**

You can choose the RX CH, OMNI CH, and TX CH.
You can choose whether a bank select message will be added.
A bank of up to 16 can be specified.

**If MULTI is selected**

The RX and TX channels will be the same.
The assignment table will use the settings for each MIDI channel. Bank select messages will not be added.
You can make settings for up to sixteen MIDI channels.

| | | |
|---|---|---|
| STATUS | 1100nnnn Cn | Program change |
| DATA | 0nnnnnnn nn | Program number (0-127) |

## 2 SYSTEM REALTIME MESSAGE

### 2.1 TIMING CLOCK (F8)

**Reception**

This message is used to control effects. This message is transmitted twenty-four times per quarter note.
Echoing of this message depends on the OTHER item in the ECHO settings.

| | | |
|---|---|---|
| STATUS | 11111000 F8 | Timing clock |

### 2.2 ACTIVE SENSING (FE)

**Reception**

Once this message has been received, MIDI communication will be initialized (e.g., Running Status will be cleared) if no message is received for an interval of 400 ms.
This message is not subject to echoing.

| | | |
|---|---|---|
| STATUS | 11111110 FE | Active sensing |

### 2.3 SYSTEM RESET (FF)

**Reception**

When this message is received, MIDI communication will be initialized (e.g., Running Status will be cleared).
This message is not subject to echoing.

| | | |
|---|---|---|
| STATUS | 11111111 FF | System reset |

## 3 System Exclusive Message

### 3.1 Bulk Dump

| Command | rx/tx | function |
|---|---|---|
| F0 43 0n 3E BB BB 11 D0 D1 D2 … EE F7 BULK DUMP DATA | rx/tx | BULK DUMP DATA |
| F0 43 2n 3E 11 D0 D1 D2 F7 BULK DUMP REQUEST | rx | BULK DUMP REQUEST |

The M7CL uses the following data types for a bulk dump.

| Data name (D0) | Data Number (D1,2) | tx/rx | function |
|---|---|---|---|
| 'M' | 0–300, 512, 768 | tx/rx | Scene Memory & Request |
| 'S' | 512–517 | tx/rx | Setup Memory & Request (current setup) |
| 's' | 512–528 | tx/rx | User Setup Memory & Request |
| 'Y' | 1–199, 512– | tx/rx | Dynamics library & Request |
| 'H' | 0–199, 512–559, 560-567 | tx/rx | Input Channel library & Request |
| 'h' | 0–199, 768–783, 1024–1031, 1280–1282 | tx/rx | Output Channel library & Request |
| 'Q' | 1–199, 512– | tx/rx | Input Equalizer library & Request |
| 'q' | 1–199, 768– | tx/rx | Output Equalizer library & Request |
| 'F' | 1–199, 512– 527 | tx/rx | GEQ Equalizer library & Request |
| 'E' | 1–199, 512– 515 | tx/rx | Effect library & Request |
| 'P' | 512 | tx/rx | Program change table & Request |
| 'C' | 512 | tx/rx | Control change table & Request |

'M'

| | |
|---|---|
| 0–300 | Scene number |
| 512 | Current Data (without Recall Safe) |
| 768 | Current Data (with Recall Safe) |

'S'

| | |
|---|---|
| 512 | Setup Memory |
| 513 | Mixer Setting |
| 514 | Output Port |
| 515 | Monitor |
| 516 | MIDI Setting |
| 517 | Library Number |

's'

| | |
|---|---|
| 512–515 | User Defined Key 1–4 |
| 516–519 | User Defined Key Guest 1–4 |
| 520–523 | User Defined Key Admin 1–4 |
| 524 | Preference |
| 525 | User Key |
| 526 | User Key Guest |
| 527 | Preference Guest |
| 528 | Preference Admin |

'Y'

| | |
|---|---|
| 1–199 | Library number |
| 512–559 | Dynamics1 Input 1–48 |
| 560–567 | STIN 1L–4R |
| 768–783 | MIX 1–16 |
| 1024–1031 | MATRIX 1–8 |
| 1280–1282 | STEREO L,R,MONO(C) |
| 1536–1583 | Dynamics2 Input 1–48 |
| 1584–1591 | STIN 1L–4R |

'H'

| | |
|---|---|
| 0–199 | Library number |
| 512–559 | Input 1–48, 560–567 STIN 1L–4R |

'h'

| | |
|---|---|
| 0–199 | Library number |
| 768–783 | MIX 1–16 |
| 1024–1031 | MATRIX 1–8 |
| 1280–1282 | STEREO L,R,MONO(C) |

'Q', 'q'

| | |
|---|---|
| 1–199 | Library number |
| 512–559 | Input 1–48, 560–567 STIN 1L–4R |
| 768–783 | MIX 1–16 |
| 1024–1031 | MATRIX 1–8 |
| 1280–1282 | STEREO L,R,MONO(C) |

'F'

| | |
|---|---|
| 1–199 | Library number |
| 512–527 | RACK 1A–8B |

'E'

| | |
|---|---|
| 1–199 | Library number |
| 512–515 | RACK 5–8 |

'P', 'C'

| | |
|---|---|
| 512 | Current Data |

Data is lost when you write to the preset library.
The unique header (Model ID) identifies whether the device is a M7CL.
To calculate the check sum, add the bytes starting with the byte after BYTE COUNT (LOW) and ending with the byte before CHECK SUM, take the binary complement, and set bit 7 to 0.
CHECK SUM = (-sum)&0x7F

Bulk Dumps can be received at any time, and can be transmitted at any time when a Bulk Dump Request is received.
A Bulk Dump is transmitted on the [Rx CH] channel in response to a Bulk Dump Request.
In the data portion, seven words of 8-bit data are converted into eight words of 7-bit data.

**[Conversion from actual data to bulk data]**

```
d[0. 6]: actual data
b[0. 7]: bulk data
b[0] = 0;
for( I=0; I<7; I++){
        if( d[I]&0x80){
                b[0] |= 1<<(6-I);
        }
        b[I+1] = d[I]&0x7F;
}
```

**[Recovery from bulk data to actual data]**

```
d[0. 6]: actual data
b[0. 7]: bulk data
for( I=0; I<7; I++){
        b[0] <<= 1;
        d[I] = b[I+1]+(0x80&b[0]);
}
```

## 3.2 PARAMETER CHANGE

**Reception**

This message is echoed if [Parameter change ECHO] is ON.
This message is received if [Parameter change RX] is ON and [Rx CH] matches the Device number included in the SUB STATUS. When a parameter change is received, the specified parameter will be controlled. When a parameter request is received, the current value of the specified parameter will be transmitted as a parameter change with its Device Number as the [Rx CH].

**Transmission**

If [Parameter change TX] is ON, and you edit a parameter for which control change transmission has not been enabled, a parameter change will be transmitted with the [Tx CH] as its device number.
In response to a parameter request, a parameter change will be transmitted with [Rx CH] as its device number.

| Command | rx/tx | function |
|---|---|---|
| F0 43 1n 3E 11 … F7<br>RARAMETER CHANGE | rx/tx | M7CL native parameter change |
| F0 43 3n 3E 11 … F7<br>PARAMETER REQUEST | rx/tx | M7CL native parameter request |

# 4 PARAMETER CHANGE details

## 4.1 Current Scene, Setup, Backup, User Setup

### 4.1.1 Format (Parameter change)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. The corresponding parameter will be changed immediately the data is received.

**Transmission**

Data will be transmitted with the [Device Number] in [Tx CH] when [Parameter change Tx] is on and the parameter is not registered on the [control change assign table].

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA Category | 0ccccccc | cc | |
| DATA | 0eeeeeee | ee | Element no. |
| | 0eeeeeee | ee | Element no. |
| | 0iiiiiii | ii | Index no. |
| | 0iiiiiii | ii | Index no. |
| | 0ccccccc | cc | Channel no. |
| | 0ccccccc | cc | Channel no. |
| | 0ddddddd | dd | data |
| | : | : | |
| EOX | 11110111 | F7 | End of exclusive |

### 4.1.2 Format (Parameter request)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. The corresponding parameter will be changed via ParameterChange immediately the data is received.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 3n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA Category | 0ccccccc | cc | |
| DATA | 0eeeeeee | ee | Element no. |
| | 0eeeeeee | ee | Element no. |
| | 0iiiiiii | ii | Index no. |
| | 0iiiiiii | ii | Index no. |
| | 0ccccccc | cc | Channel no. |
| | 0ccccccc | cc | Channel no. |
| EOX | 11110111 | F7 | End of exclusive |

### 4.1.3 Data category

| DATA CATEGORY | | NAME |
|---|---|---|
| 0x01 | 00000001 | Current Scene/Setup/Backup/<br>User Setup Data |

## 4.2 Function call – library store, recall –

### 4.2.1 Format (Parameter change)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. The corresponding parameter will be changed immediately the data is received.

**Transmission**

Data will be transmitted with the [Device Number] in [Tx CH] when [Parameter change Tx] is on.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "L" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0mmmmmmm | mh | number High |
| | 0mmmmmmm | ml | number Low |
| | 0ccccccc | ch | channel High |
| | 0ccccccc | cl | channel Low |
| EOX | 11110111 | F7 | End of exclusive |

#### 4.2.2 Function Name

| FUNCTION NAME | |
|---|---|
| Store | "LibStr__" |
| Recall | "LibRcl__" |
| Unknown Factor Store | "LibUnStr" |
| Unknown Factor Recall | "LibUnRcl" |
| Store Undo (only Scene) | "LibStrUd" |
| Recall Undo (only Scene) | "LibRclUd" |

#### 4.2.3 Module Name

| MODULE NAME | |
|---|---|
| Scene | "SCENE___" |
| Input CH | "INCHNNL_" |
| Output CH | "OUTCHNNL" |
| Input EQ | "INEQ____" |
| Output EQ | "OUTEQ___" |
| Dynamics | "DYNA____" |
| GEQ | "GEQ_____" |
| Effect | "EFFECT__" |

| Function | | Number | channel*1) | tx/rx |
|---|---|---|---|---|
| "LibStr__" | SCENE | 1- 300 | *5) | tx/rx |
| | INPUT CH LIB | 1-199 | *1) | tx/rx |
| | OUTPUT CH LIB | 1-199 | *2) *3) *4) | tx/rx |
| | INPUT EQ LIB | 41- 199 | *1) | tx/rx |
| | OUTPUT EQ LIB | 4- 199 | *2) *3) *4) | tx/rx |
| | Dynamics LIB | 42- 199 | *1) *2) *3) *4) *8) | tx/rx |
| | GEQ LIB | 1- 199 | *6) | tx/rx |
| | EFFECT LIB | 58- 199 | *7) | tx/rx |
| "LibUnStr" | SCENE | 1- 300 | 0 | tx |
| | INPUT CH LIB | 1-199 | 0 | tx |
| | OUTPUT CH LIB | 1-199 | 0 | tx |
| | INPUT EQ LIB | 41- 199 | 0 | tx |
| | OUTPUT EQ LIB | 4- 199 | 0 | tx |
| | Dynamics LIB | 42- 199 | 0 | tx |
| | GEQ LIB | 1- 199 | 0 | tx |
| | EFFECT LIB | 58- 199 | 0 | tx |
| "LibRcl__" | SCENE | 0- 300 | *5) | tx/rx |
| | INPUT CH LIB | 0-199 | *1) | tx/rx |
| | OUTPUT CH LIB | 0-199 | *2) *3) *4) | tx/rx |
| | INPUT EQ LIB | 1- 199 | *1) | tx/rx |
| | OUTPUT EQ LIB | 1- 199 | *2) *3) *4) | tx/rx |
| | Dynamics LIB | 1- 199 | *1) *2) *3) *4) *8) | tx/rx |
| | GEQ LIB | 0- 199 | *6) | tx/rx |
| | EFFECT LIB | 1- 199 | *7) | tx/rx |
| "LibUnRcl" | SCENE | 0 | *5) | tx |
| | INPUT CH LIB | 0 | *1) | tx |
| | OUTPUT CH LIB | 0 | *2) *3) *4) | tx |
| | INPUT EQ LIB | 0 | *1) | tx |
| | OUTPUT EQ LIB | 0 | *2) *3) *4) | tx |
| | Dynamics LIB | 0 | *1) *2) *3) *4) *8) | tx |
| | GEQ LIB | 0 | *6) | tx |
| | EFFECT LIB | 0 | *7) | tx |
| "LibStrUd" | SCENE | 0 | 0 | |
| "LibRclUd" | SCENE | 0 | 0 | |

*1) 0:CH1–47:CH48
48:ST IN 1L–55:ST IN 4R
*2) 256:MIX1–271:MIX16
*3) 512:MATRIX1–519:MATRIX8
*4) 1024:STEREO L–1026:MONO(C)
*5) 512:will be used if the recalling or storing data is only one.
*6) 0:RACK1–7:RACK8 If a GEQ is mounted in RACK 1–8.
*7) 0:RACK5–3:RACK8 If an effect is mounted in RACK 5–8.
*8) 1280:CH 1–1327:CH 48
1328:STIN 1L–1335:STIN 4R
(Dynamics2)

## 4.3 Function call – library edit –

#### 4.3.1 Format (Parameter change)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. The corresponding memory/library will be changed immediately the data is received.

**Transmission**

Parameter Change Message will be sent in reply to Request. If [Parameter change ECHO] is on, the message will be sent as it is.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "L" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| | 0fffffff | ff | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0mmmmmmm | mh | number -source start High |
| | 0mmmmmmm | ml | number -source start Low |
| | 0mmmmmmm | mh | number -source end High |
| | 0mmmmmmm | ml | number -source end Low |
| | 0mmmmmmm | mh | number -destination start High |
| | 0mmmmmmm | ml | number -destination to start Low |
| EOX | 11110111 | F7 | End of exclusive |

#### 4.3.2 Function Name

| FUNCTION NAME | |
|---|---|
| Copy | "LibCpy__" |
| Paste | "LibPst__" |
| Clear | "LibClr__" |
| Cut | "LibCut__" |
| Insert | "LibIns__" |
| Edit Undo | "LibEdtUd" |

#### 4.3.3 Module Name

| MODULE NAME | |
|---|---|
| SCENE LIB | "SCENE___" |
| INPUT CH LIB | "INCHNNL_" |
| OUTPUT CH LIB | "OUTCHNNL" |
| INPUT EQ LIB | "INEQ____" |
| OUTPUT EQ LIB | "OUTEQ___" |
| Dynamics LIB | "DYNA____" |
| GEQ LIB | "GEQ_____" |
| EFFECT LIB | "EFFECT__" |

## 4.4 Function call – library attribute –

### 4.4.1 Format (Parameter change)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. The corresponding memory/library title will be changed immediately the data is received.

**Transmission**

Parameter Change Message will be sent in reply to Request. If [Parameter change ECHO] is on, the message will be sent as it is.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "L" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 01000001 | "A" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| | 01110010 | "r" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0nnnnnnn | nh | Scene/Library number High |
| | 0nnnnnnn | nl | Scene/Library number Low |
| | 0eeeeeee | eh | Element High |
| | 0eeeeeee | El | Element Low |
| | 0iiiiiii | Ih | Index High |
| | 0iiiiiii | Il | Index Low |
| | 0ccccccc | Ch | Channel High |
| | 0ccccccc | cl | Channel Low |
| | 0000dddd | dd | Data28–31bit |
| | 0ddddddd | dd | Data21–27bit |
| | 0ddddddd | dd | Data14–20bit |
| | 0ddddddd | dd | Data7–13bit |
| | 0ddddddd | dd | Data0–6bit |
| EOX | 11110111 | F7 | End of exclusive |

### 4.4.2 Format (Parameter request)

**Receive**

The Parameter change will be sent with Device number [Rx CH] immediately the data is received.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0011nnnn | 3n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "L" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 01000001 | "A" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| | 01110010 | "r" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0nnnnnnn | nh | Scene/Library number High |
| | 0nnnnnnn | nl | Scene/Library number Low |
| | 0eeeeeee | eh | Element High |
| | 0eeeeeee | El | Element Low |
| | 0iiiiiii | Ih | Index High |
| | 0iiiiiii | Il | Index Low |
| | 0ccccccc | Ch | Channel High |
| | 0ccccccc | cl | Channel Low |
| EOX | 11110111 | F7 | End of exclusive |

### 4.4.3 Module Name

| MODULE NAME | | number | size |
|---|---|---|---|
| SCENE LIB | "SCENE___" | 0-300 (0:response only) | 16 |
| INPUT CH LIB | "INCHNNL_" | 0-199 (0:response only) | 16 |
| OUTPUT CH LIB | "OUTCHNNL" | 0-199 (0:response only) | 16 |
| INPUT EQ LIB | "INEQ____" | 1-199 (1-40:response only) | 16 |
| OUTPUT EQ LIB | "OUTEQ___" | 1-199 (1-3:response only) | 16 |
| Dynamics LIB | "DYNA____" | 1-199 (1-41:response only) | 16 |
| GEQ LIB | "GEQ_____" | 0-199 (0:response only) | 16 |
| EFFECT LIB | "EFFECT__" | 1-199 (1–57:response only) | 16 |

## 4.5 Exist Library Range

### 4.5.1 Format (Parameter change)

**Transmission**

When M7CL receives Library Exist request command from outside, the answer will be sent back with the following Parameter change.
This packet shows smallest library number range that exists and not read only.
Top number is requested number or more.

**-Example-**
SCENE is stored 5,6,7,10,100 and 101
Request Number:0
Data : Valid, Top Number : 5, End Number 7
Request Number: 8
Data : Valid, Top Number : 10, End Number 10
Request Number: 11
Data : Valid, Top Number : 100, End Number 101
Request Number: 102
Data : Invalid, Top Number : 0, End Number 0

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "L" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 01000101 | "E" | (ASCII CODE) |
| | 01111000 | "x" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01110011 | "s" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0mmmmmmm | nn | Data Status (0:Invalid data,1:Valid Data) |
| | 0nnnnnnn | nh | Request Number High |
| | 0nnnnnnn | nl | Request Number Low |
| | 0nnnnnnn | nh | Top Number High |
| | 0nnnnnnn | nl | Top Number Low |
| | 0nnnnnnn | nh | End Number High |
| | 0nnnnnnn | nl | End Number Low |
| EOX | 11110111 | F7 | End of exclusive |

#### 4.5.2 Format (Parameter request)

**Receive**

The Parameter change will be sent with Device number [Rx CH] immediately the data is received.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0011nnnn | 3n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "L" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01100010 | "b" | (ASCII CODE) |
| | 01000101 | "E" | (ASCII CODE) |
| | 01111000 | "x" | (ASCII CODE) |
| | 01101001 | "i" | (ASCII CODE) |
| | 01110011 | "s" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0nnnnnnn | nh | Request Number High |
| | 0nnnnnnn | nl | Request Number Low |
| EOX | 11110111 | F7 | End of exclusive |

#### 4.5.3 Module Name

| MODULE NAME | | number |
|---|---|---|
| SCENE LIB | "SCENE___" | 1-300 |
| INPUT CH LIB | "INCHNNL_" | 1-199 |
| OUTPUT CH LIB | "OUTCHNNL" | 1-199 |
| INPUT EQ LIB | "INEQ____" | 41-199 |
| OUTPUT EQ LIB | "OUTEQ___" | 4-199 |
| Dynamics LIB | "DYNA____" | 42-199 |
| GEQ LIB | "GEQ_____" | 1-199 |
| EFFECT LIB | "EFFECT__" | 58-199 |

### 4.6 Function call – collection store –

#### 4.6.1 Format (Parameter change)

**Transmission**

Data will be transmitted with the [Device Number] in [Tx CH] when [Parameter change Tx] is on.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001100 | "C" | (ASCII CODE) |
| | 01101001 | "o" | (ASCII CODE) |
| | 01100010 | "l" | (ASCII CODE) |
| | 01010101 | "U" | (ASCII CODE) |
| | 01101110 | "n" | (ASCII CODE) |
| | 01010011 | "S" | (ASCII CODE) |
| | 01110100 | "t" | (ASCII CODE) |
| | 01110010 | "r" | (ASCII CODE) |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0mmmmmmm | mh | number High |
| | 0mmmmmmm | ml | number Low |
| | 0ccccccc | ch | channel High |
| | 0ccccccc | cl | channel Low |
| EOX | 11110111 | F7 | End of exclusive |

#### 4.6.2 Function Name

| Function | | Number | tx/rx |
|---|---|---|---|
| "ColUnStr" | Setup | 0 | tx |
| | User Defined Key | 0 | tx |
| | Program Change | 0 | tx |
| | Control Change | 0 | tx |

#### 4.6.3 Module Name

| MODULE NAME | |
|---|---|
| Setup | "SETUP___" |
| User Defined Key | "USERDEF_" |
| Program Change | "PRGMCHG_" |
| Control Change | "CTRLCHG_" |

### 4.7 Function call – module –

#### 4.7.1 Format (Parameter change)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. The corresponding effect will function immediately the data is received (depending on the effect type).

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01001101 | "M" | |
| | 01101111 | "o" | |
| | 01100100 | "d" | |
| | 01000110 | "F" | |
| | 01111000 | "x" | |
| | 01010100 | "T" | |
| | 01110010 | "r" | |
| | 01100111 | "g" | |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0eeeeeee | ee | Effect number (0:RACK5 - 3:RACK8) |
| | 0ppppppp | pp | Release:0, Press:1 |
| EOX | 11110111 | F7 | End of exclusive |

#### 4.7.2 Module Name

| MODULE NAME | | channel |
|---|---|---|
| Freeze Play button | "FRZPLAY_" | 0:RACK5, 2:RACK7 |
| Freeze Record button | "FRZREC__" | 0:RACK5, 2:RACK7 |

This will not work when the Effect Type is different.

## 4.8 Function call – Channe –

### 4.8.1 Pair ON/OFF Trigger Format (Parameter change)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00000000 | 00 | OTHER DATA |
| FUNCTION NAME | 01000011 | "C" | |
| | 01101000 | "h" | |
| | 01101100 | "l" | |
| | 01010000 | "P" | |
| | 01101001 | "i" | |
| | 01110010 | "r" | |
| | 01000011 | "C" | |
| | 01110000 | "p" | |
| MODULE NAME | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| | 0mmmmmmm | mm | (ASCII CODE) |
| DATA | 0sssssss | ss | Source Channel Number H *1) |
| | 0sssssss | ss | Source Channel Number L *1) |
| | 0ddddddd | dd | Destination Channel Number H *1) |
| | 0ddddddd | dd | Destination Channel Number L *1) |
| EOX | 11110111 | F7 | End of exclusive |

### 4.8.2 Module Name

| MODULE NAME | |
|---|---|
| Pair On (with Copy) | "PAIRONCP" |
| Pair On (with Reset Both) | "PAIRONRS" |
| Pair Off | "PAIROFF_" |

*1) 0:CH1–47:CH48
256:MIX 1– 271:MIX 16
512:MATRIX 1–519:MATRIX 8

## 4.9 Level Meter Data

### 4.9.1 Format (Parameter change)

When transmission is enabled by receiving Request for Level Meter, the corresponding metering data will be sent in every 50 millisecond for 10 seconds. If metering information is expected to be continuously sent, Request is needed to be sent in at least every 10 seconds.

**Receive**

The data will be echoed when [Parameter change ECHO] is ON.

**Transmission**

When transmission is enabled by receiving Request, the corresponding metering data will be sent in constant interval for a given period of time (The interval and time will vary depending on devices). When rebooted or port setting is changed, the transmission will be disabled.
When [Parameter change ECHO] is on, the message will be sent as it is.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0001nnnn | 1n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00100001 | 21 | REMOTE LEVEL METER |
| DATA | 0mmmmmmm | mm | ADDRESS UL |
| | 0mmmmmmm | mm | ADDRESS LU |
| | 0mmmmmmm | mm | ADDRESS LL |
| | 0ddddddd | dd | Data1 |
| | : | : | |
| EOX | 11110111 | F7 | End of exclusive |

### 4.9.2 Format (Parameter request)

**Receive**

Data will be received when [Parameter change Rx] is on and the Device number of both [Rx CH] and SUB STATUS are matched. The data will be echoed when [Parameter change ECHO] is on. the corresponding metering data will be sent via [Rx CH] in constant interval for a given period of time (The interval and time will vary depending on devices).
When Address UL = 0x7F is received, all metering data transmission will be immediately stopped [disabled].

**Transmission**

When [Parameter change ECHO] is on, the message will be sent as it is.

| | | | |
|---|---|---|---|
| STATUS | 11110000 | F0 | System exclusive message |
| ID No. | 01000011 | 43 | Manufacture's ID number (YAMAHA) |
| SUB STATUS | 0011nnnn | 3n | n=0-15 (Device number=MIDI Channel) |
| GROUP ID | 00111110 | 3E | Digital mixer |
| MODEL ID | 00010001 | 11 | M7CL |
| DATA CATEGORY | 00100001 | 21 | REMOTE LEVEL METER |
| DATA | 0mmmmmmm | mm | ADDRESS UL |
| | 0mmmmmmm | mm | ADDRESS LU |
| | 0mmmmmmm | mm | ADDRESS LL |
| | 0ccccccc | ch | Count H |
| | 0ccccccc | cl | Count L |
| EOX | 11110111 | F7 | End of exclusive |

# Warning/Error Messages

| Message | Meaning |
|---|---|
| **Scene #xxx is Empty!** | No data has been stored in the scene you attempted to recall, or the data has been damaged so that it cannot be recalled. |
| **Scene #xxx is Protected!** | You attempted to overwrite (store) a protected scene. |
| **Scene #xxx is Read Only!** | You attempted to overwrite (store) a read-only scene. |
| **xxx Parameters Copied.** | Parameter xxx was copied to the copy buffer. |
| **xxx Parameters Initialized.** | Parameter xxx was initialized. |
| **xxx Parameters Pasted.** | Parameter xxx was pasted from the copy buffer. |
| **xxx Parameters Swapped with Copy Buffer.** | Parameter xxx was exchanged with the contents of the copy buffer. |
| **AUTO CONFIGURE is ON.** | The word clock setting cannot be changed if the AUTO CONFIGURE button is turned ON. |
| **Cannot Assign!** | You attempted to assign an output channel to DCA. |
| **Cannot Bookmark This Popup!** | This popup window cannot be bookmarked. |
| **Cannot Paste to Different Parameter Type!** | Paste cannot be performed because you are attempting to paste channel settings of a different type. |
| **Cannot Recall to Different Parameter Type!** | You attempted to recall a library of a different type. |
| **Cannot Recall!** | Failed to recall a scene memory or library. |
| **Cannot Select This Channel.** | You attempted to select a channel that cannot be operated due to your user level or some other reason. |
| **Cannot Store!** | Failed to store a scene memory or library. |
| **Cannot Undo!** | You pressed the [UNDO] button when Undo was not available. |
| **Channel Copied.** | Channel settings have been copied. |
| **Channel Initialized.** | Channel settings have been initialized. |
| **Channel Moved.** | Channel settings have been moved. |
| **Couldn't Access File.** | File on the USB storage device could not be accessed for some reason. |
| **Couldn't Write File.** | File could not be saved from the USB storage device. |
| **Current User Changed. [xxx]** | Current user was changed to [xxx]. |
| **Directory Not Empty!** | You attempted to delete a directory, but failed because there were files remaining in the directory. |
| **EFFECT CUE: Turned Off.** | CUE was defeated because you switched from the EFFECT popup window to a different screen. |
| **External HA connection conflict!** | External HA connection status is different so that External HA data cannot be recalled. |
| **External Power Supply is Cut Off!** | The PW800W power supply connected to the M7CL has stopped operating. Alternatively, some other problem has occurred. If a malfunction has occurred, please contact your Yamaha dealer. |
| **Failed to finish the process! Please restart the M7CL and try again.** | The process has failed to be completed. Restart the M7CL and execute the process again. |
| **File Access is Busy!** | The following operation has not been performed yet because the USB storage device is being accessed. |
| **File Already Exists!** | The USB storage device already contains a file/directory with the same name as the one you are attempting to save, rename, or create. |
| **File Error [xx]!** | Internal file access error |
| **File Protected!** | Overwriting was not possible because the file on the USB storage device is write-protected. |
| **Illegal Address!** | The IP address or Gateway address setting is invalid. |
| **Illegal MAC Address! Cannot Use Ethernet.** | Communication via the NETWORK connector is not possible because the MAC address setting has been damaged for some reason. Please contact your Yamaha dealer. |
| **Illegal Storage Format!** | The USB storage device could not be accessed because its format is invalid or unsupported. |
| **Internal Power Supply is Cut Off!** | The internal power supply has stopped operating. Alternatively, some other problem has occurred. If a malfunction has occurred, please contact your Yamaha dealer. |
| **Internal Power Supply is Turned On!** | The internal power supply has started up normally. |
| **KEY IN CUE: Turned Off.** | KEY IN CUE was defeated because you switched from the DYNAMICS 1/2 popup window to a different screen. |
| **Loading Aborted.** | Loading from USB storage device was aborted. |
| **Low Battery!** | The backup battery voltage is low. |
| **Memory Error! All Memories Initialized.** | All data has been initialized because the data in internal backup memory has been lost, due to failure of the backup battery or some other reason. Please contact your Yamaha dealer. |
| **Monitor Assignment is Restricted to Max. 8 Sources!** | The Monitor Define function allows a maximum of eight sources to be selected, but you attempted to assign more than this. |
| **No copy item selected.** | You attempted to paste an item in the Global Paste without first selecting it. |
| **No Response from External HA.** | No response from an external AD8HR. |
| **Nothing to Paste!** | Paste cannot be performed because there is no data in the copy buffer. |
| **Old type! Load and save as this version first.** | In the STAGE BOX DATA CONVERSION dialog box, you attempted to convert a file other than one saved using version 3 or later. |
| **Page Bookmarked.** | The current screen or popup has been bookmarked. |
| **Password Changed.** | The password has been changed. |
| **Power Supply Fan has Malfunctioned!** | The cooling fan of the internal power supply has stopped. If a malfunction has occurred, please contact your Yamaha dealer. |
| **Processing Aborted.** | Processing was interrupted. |

| Message | Meaning |
|---|---|
| **REMOTE: Data Framing Error!** | Invalid signals are being input to the REMOTE connector. |
| **REMOTE: Data Overrun!** | Invalid signals are being input to the REMOTE connector. |
| **REMOTE: Rx Buffer Full!** | Too much data is being received at the REMOTE connector. |
| **REMOTE: Tx Buffer Full!** | Too much data is being sent from the REMOTE connector. |
| **Saving Aborted.** | Saving to the USB storage device has been interrupted. |
| **SLOT x: Data Framing Error!** | Invalid signals are being input from the SLOT x input port. |
| **SLOT x: Data Overrun!** | Invalid signals are being input from the SLOT x input port. |
| **SLOT x: Rx Buffer Full!** | Too much data is being received at the SLOT x input port. |
| **SLOT x: Tx Buffer Full!** | Too much data is being sent from the SLOT x output port. |
| **Storage Full!** | The file could not be saved because there is not enough space on the USB storage device. |
| **Storage Not Found!** | The USB storage device could not be recognized. |
| **Storage Not Ready!** | Access is not possible because the USB storage device is not ready. |
| **Sync Error! [xxx]** | The M7CL is not synchronized with the [xxx] signal. |
| **Tap Operation Ignored.** | Tap operation was ignored because the TAP TEMPO button is not displayed in the screen. |
| **This Operation is Not Allowed.** | This operation has been ignored because the current user does not have permission. |
| **Too Many Bands Used! Cannot Compare.** | More than 15 bands are used, when trying to copy 31BandGEQ and then compare with Flex15GEQ. |
| **Too Many Bands Used! Cannot Paste to Flex15GEQ.** | More than 15 bands are used, when trying to copy 31BandGEQ and then paste to Flex15GEQ. |
| **Total Slot Power Capability Exceeded!** | The I/O cards installed in the slots exceed the rated power capacity. |
| **Unassigned Encoder.** | Your operation has been ignored because there is no parameter that corresponds to the encoder you operated. |
| **Unsupported File Format!** | The file you attempted to load from the USB storage device is of an unsupported format. |
| **USB: Data Framing Error!** | Invalid signals are being input from the USB connector input port. |
| **USB: Data Overrun!** | Invalid signals are being input from the USB connector input port. |
| **USB: Rx Buffer Full!** | Too much data is being received at the USB connector input port. |
| **USB: Tx Buffer Full!** | Too much data is being transmitted from the USB connector input port. |
| **Wrong Password!** | The password you input was incorrect. |
| **Wrong Word Clock!** | The M7CL cannot synchronize because the source selected by MASTER CLOCK SELECT in the WORD CLOCK screen is not appropriate. |
| **You Cannot Create User Key.** | The current user does not have permission to create a user key. |

# Troubleshooting

| | |
|---|---|
| **Power does not turn on, panel LEDs and the LCD display do not light** | ❍ Is the M7CL's Power switch turned on?<br>❍ If the power still does not turn on, contact your Yamaha dealer. |
| **Sound is not input** | ❍ Is the optional I/O card installed correctly? (→ p. 49)<br>❍ Is a signal being input from the external device?<br>❍ Is the input port patched to an input channel? (→ p. 108)<br>❍ Is the GAIN of the internal head amp or external head amp set to an appropriate level? (→ p. 51, 61)<br>❍ Is the EQ attenuator raised? (→ p. 115)<br>❍ If a phantom-powered microphone is connected to the M7CL, the [+48 MASTER] switch must be set to on. (→ p. 229)<br>❍ If a phantom-powered microphone is connected to the SB168-ES unit, the [+48 MASTER] switch must be set to on.<br>❍ Is the Stage Box Setup function set properly? (→ p. 242)<br>❍ Did you correctly set the dip switches on the SB168-ES unit connected to the M7CL-48ES before turning on the power to the devices? (→ p. 44, 45)<br>❍ Has the firmware of the SB168-ES (connected to the M7CL-48ES) been updated to an appropriate version? (→ p. 16) |
| **Sound is not output** | ❍ Is the optional I/O card installed correctly? (→ p. 49)<br>❍ Is the [ON] key indicator of the STEREO channel lit?<br>❍ Is an output port patched to the output channel? (→ p. 105)<br>❍ Could LCR be on, and the CSR value be set to 1.0? (→ p. 63)<br>❍ Is the [ON] key indicator of the input channel lit?<br>❍ Is the fader of the input channel raised?<br>❍ Is the DCA fader assigned to that channel raised? Could MUTE be turned on?<br>❍ Is the attenuator of the corresponding output channel set to a proper level?<br>❍ Is the Stage Box Setup function set properly? (→ p. 242)<br>❍ Did you correctly set the dip switches on the SB168-ES unit connected to the M7CL-48ES before turning on the power to the devices? (→ p. 44, 45)<br>❍ Has the firmware of the SB168-ES (connected to the M7CL-48ES) been updated to an appropriate version? (→ p. 16) |
| **Sound is not output from headphones or the MONITOR OUT jacks** | ❍ Is the [PHONES] knob or [LEVEL] knob set to an appropriate volume?<br>❍ Is the monitor fader set to a proper level? (→ p. 154)<br>❍ Is the monitoring source selected? (→ p. 154)<br>❍ Is the dimmer applied? |
| **Sound is not loud enough** | ❍ Is the GAIN of the internal head amp or external head amp set to an appropriate level? (→ p. 51, 61)<br>❍ Is the fader of the input channel raised?<br>❍ Could the EQ gain be set to an extremely low setting? (→ p. 115)<br>❍ Could the GATE/COMP threshold or ratio be set to an extreme setting? (→ p. 118)<br>❍ Is the EQ attenuator raised? (→ p. 115)<br>❍ Is the fader of the output channel raised?<br>❍ Try using the various screens of the METER function to check the levels. (→ p. 167)<br>❍ Is the DCA fader assigned to that channel raised? |
| **Sound is distorted** | ❍ Is the word clock set correctly? (→ p. 230)<br>❍ Is the GAIN of the internal head amp or external head amp set to an appropriate level? (→ p. 51, 61)<br>❍ Could the fader of the input channel be raised too high?<br>❍ Could the fader of the STEREO channel be raised too high?<br>❍ Could the EQ gain be set to an extremely high setting? (→ p. 115) |
| **Sound is output even though it is not patched to an output channel** | ❍ Could you have assigned an input channel to direct out? (→ p. 112)<br>❍ Could you have assigned an output channel as the insert out? (→ p. 110) |
| **The volume of a specific channel rises and falls** | ❍ Could GATE/COMP be set to ducking? (→ p. 118) |
| **Operating a fader does not control the level as you expect** | ❍ Could the function access area indicate MIX/MTRX ON FADER? And could SENDS ON FADER mode be engaged? |
| **Only the sound of a specific channel is heard from the MONITOR OUT or PHONES jack** | ❍ Could a [CUE] key be on? |
| **Noise occurs from an externally connected recorder or other device** | ❍ Is the word clock set correctly? (→ p. 230)<br>❍ Could the input signal be unsynchronized?<br>❍ Could oscillator or talkback be turned on? (→ p. 161, 164) |
| **High frequency range is attenuated** | ❍ Could emphasis be applied? This problem will occur if the input signal status does not match the emphasis data. (→ p. 230)<br>❍ Could EQ be applied? (→ p. 115) |
| **Not enough headroom, especially when EQ boost is applied** | ❍ Use the EQ attenuator function to lower the level. (→ p. 115) |
| **Signal is delayed** | ❍ Check whether the delay setting for each channel is set correctly. (→ p. 105) |
| **Turning a MIX encoder does not change the send level to the MIX bus** | ❍ Is the [TO MIX SEND ON/OFF] button turned on?<br>❍ Is the MIX [ON] key turned on?<br>❍ Is the MIX bus set to VARI type? (→ p. 234)<br>❍ If the send point is set to POST, could the fader have been lowered? |
| **Can't save scene memory or library data** | ❍ Are you attempting to save the data to a read-only scene/library or a protected scene? (→ p. 135)<br>❍ Could user level restrictions have been specified? (→ p. 212) |

| | |
|---|---|
| **Can't save to USB storage device** | ❍ Is the USB storage device protected?<br>❍ Does the USB storage device have enough free capacity to save the data?<br>❍ When formatting the USB storage device, format it in FAT32 or FAT16 format. |
| **Can't change the patching in AVS-ESMonitor** | ❍ Could the AUTO CONFIGURE button for the Stage Box Setup function be turned on?<br>❍ Could dip switches 5–8 for the SB168-ES be set to On (down position)?<br>❍ Could the "Lock Routing" option be selected on the Control screen of AVS-ESMonitor? |
| **Can't change Serial Communication Mode in AVS-ESMonitor** | ❍ Could the AUTO CONFIGURE button for the Stage Box Setup function be turned on?<br>❍ Could dip switches 5–8 for the SB168-ES be set to On (down position)? |
| **Can't execute Quick Setup in AVS-ESMonitor** | ❍ Could the AUTO CONFIGURE button for the Stage Box Setup function be turned on?<br>❍ Could dip switches 5–8 for the SB168-ES be set to On (down position)? |
| **Can't transmit/receive MIDI data** | ❍ Is the MIDI PORT selected correctly? (→ p. 198)<br>❍ Are the mode and channel selected correctly on the transmitting and receiving devices? (→ p. 198)<br>❍ Has an event been assigned for the program change? (→ p. 200) |
| **When you recall a scene, some channels/parameters are not updated** | ❍ Could Recall Safe have been applied to that channel or parameter? (→ p. 148)<br>❍ Could FOCUS for the recalled scene be turned off? (→ p. 147)<br>❍ Could user level restrictions have been specified? (→ p. 212) |
| **You turn on a CUE button in the EFFECT screen, but it is automatically defeated** | ❍ This is defeated automatically when you switch screens in the display. (→ p. 184) |
| **When you recall a scene, it takes a certain amount of time for the faders to stop** | ❍ Could you have specified a fade time? (→ p. 151) |
| **The panel LEDs or LCD display are too dark / too bright** | ❍ This can be adjusted in the SETUP screen. (→ p. 237) |
| **Signal level of a specific frequency is low** | ❍ Could the EQ gain be turned down excessively?<br>❍ Routing a signal through a GEQ or effect will delay it relative to other signals. If this signal is mixed with the signal via a different signal path, a comb filtering effect will cause the level of a specific frequency to be decreased. |
| **Can't control an external head amp (AD8HR)** | ❍ Is the external head amp connected to the REMOTE connector?<br>❍ Is the audio output signal of the external head amp being input via an I/O card to SLOT 1–3?<br>❍ Is the input port of the external head amp set correctly?<br>❍ Could there be a problem with the cable that connects the M7CL and external head amp? Are you using a D-sub 9-pin cross cable? |
| **Can't control the M7CL by M7CL V3 Editor.** | ❍ Is the M7CL firmware version 3?<br>❍ Are you using M7CL V3 Editor as an editor?<br>❍ Refer to M7CL V3 Editor installation guide on our web site.<br>http://www.yamahaproaudio.com/ |
| **In the LCD display, there are some black points (unlit) or white points (always lit).** | ❍ Unfortunately, this is a common characteristic of TFT-LCDs and not a malfunction. |

# General Specifications

| | |
|---|---|
| **Sampling Frequency** | Internal: 44.1 kHz, 48 kHz<br>External: 44.1kHz (-10%) to 48kHz (+6%) <M7CL-32/48><br>44.1kHz (-2.5%) to 48kHz (+2.5%) <M7CL-48ES> |
| **Signal Delay** | Less than 2.5 ms INPUT or OMNI IN to OMNI OUT (@Fs = 48 kHz) |
| **Fader** | M7CL-48/48ES: 100 mm motorized x62<br>M7CL-32: 100 mm motorized x46 |
| **Fader Resolution** | +10 to -138, -∞ dB (1024 steps/100 mm) |
| **Maximum Voltage Gain** | M7CL-32/48: 86 dB INPUT 1–48 to OMNI OUT<br>M7CL-48ES: 86 dB OMNI IN 1–8 to OMNI OUT 1–8 |
| **Crosstalk (@1kHz)** | M7CL-32/48: -80 dB Adjacent Input Channels (INPUT1–48, ST IN 1–4 [L, R], (GAIN:min) to OMNI OUT 1–16)<br>M7CL-48ES: -80 dB Adjucent Input Channels (OMNI IN 1–8, (GAIN:min) to OMNI OUT 1–8) |
| **Dimensions** | M7CL-48/48ES: 1274 x 286 x 701 mm (W x H x D)<br>M7CL-32: 1060 x 286 x 701 mm (W x H x D) |
| **Net Weight** | M7CL-48: 50 kg<br>M7CL-32: 42 kg<br>M7CL-48ES: 46 kg |
| **Power Requirements (wattage)** | M7CL-48: 300 W<br>M7CL-32: 250 W<br>M7CL-48ES: 150 W |
| **Power Requirements (voltage and hertz)** | US/Canada: 120V 60Hz<br>Japan: 100V 50/60Hz<br>China: 110–240V 50/60Hz<br>Korea: 220V 60Hz<br>Other: 110–240V 50/60Hz |
| **Operation free-air Temperature Range** | +10 °C to +35 °C |
| **Storage Temperature Range** | -20 °C to +60 °C |
| **Included Accessories** | Owner's Manual<br>Dust cover<br>Power cord<br>Cord clamp |
| **Optional Accessories** | Meter Bridge MBM7CL<br>mini YGDAI cards *<br>Gooseneck Lamp LA1L<br>Power Supply PW800W<br>Power Supply Link Cable PSL360 |

* Refer to the Yamaha professional audio website for information on supported I/O cards.
http://www.yamahaproadio.com/

# Input/output characteristics

## ❑ Analog Input Characteristics

| Input Terminals | GAIN | Actual Load Impedance | For Use With Nominal | Input Level | | | Connector |
|---|---|---|---|---|---|---|---|
| | | | | Sensitivity *1 | Nominal | Max. Before Clip | |
| INPUT 1-48 <M7CL-48><br>INPUT 1-32 <M7CL-32> | –62 dB | 3 kΩ | 50-600 Ω Mics & 600 Ω Lines | –82 dBu (61.6 µV) | –62 dBu (0.616 mV) | –42 dBu (6.16 mV) | XLR-3-31 type (Balanced)*2 |
| | +10 dB | | | –10 dBu (245 mV) | +10 dBu (2.45 V) | +30 dBu (24.5 V) | |
| ST IN 1-4 [L,R] <M7CL-32/48><br>OMNI IN 1-8 <M7CL-48ES> | –62 dB | 3 kΩ | 50-600 Ω Mics & 600 Ω Lines | –82dBu (61.6 µV) | –62 dBu (0.616 mV) | –42 dBu (6.16 mV) | XLR-3-31 type (Balanced)*2 |
| | +10 dB | | | –10 dBu (245 mV) | +10 dBu (2.45 V) | +30 dBu (24.5 V) | |
| TALKBACK | –60 dB | 3 kΩ | 50-600 Ω Mics & 600 Ω Lines | –70 dBu (0.245 mV) | –60 dBu (0.775 mV) | –40 dBu (7.75 mV) | XLR-3-31 type (Balanced)*2 |
| | –16 dB | | | –26 dBu (38.8 mV) | –16 dBu (0.123 V) | +4 dBu (1.23 V) | |

*1. Sensitivity is the lowest level that will produce an output of +4 dBu (1.23 V) or the nominal output level when the unit is set to maximum gain. (all faders and level controls are maximum position.)

*2. XLR-3-31 type connectors with latch are balanced. (1=GND, 2=HOT, 3=COLD)

* In these specifications, 0 dBu = 0.775 Vrms.
* All input AD converters are 24bit linear, 128 times oversampling.
* +48V DC (phantom power) is supplied to INPUT (1-48 or 1-32), ST IN 1L-4R, OMNI IN 1-8 and TALKBACK XLR type connectors via each individual software controlled switches.

## ❑ Analog Output Characteristics

| Output Terminals | Actual Source Impedance | For Use With Nominal | GAIN SW*3 | Output Level | | Connector |
|---|---|---|---|---|---|---|
| | | | | Nominal | Max. Before Clip | |
| OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 75 Ω | 600 Ω Lines | +24 dB (default) | +4 dBu (1.23 V) | +24 dBu (12.3 V) | XLR-3-32 type (Balanced)*1 |
| | | | +18 dB | –2 dBu (616 mV) | +18 dBu (6.16 V) | |
| PHONES | 15 Ω | 8 Ω Phones | — | 75 mW*4 | 150 mW | Stereo Phone Jack (TRS) (Unbalanced)*2 |
| | | 40 Ω Phones | | 65 mW*4 | 150 mW | |

*1. XLR-3-32 type connectors are balanced. (1=GND, 2=HOT, 3=COLD)
*2. PHONES stereo phone jack is unbalanced. (Tip=LEFT, Ring=RIGHT, Sleeve=GND)
*3. There are switches inside the body to preset the maximum output level.
*4. The position of the level control is 10 dB lowered from Max.

* In these specifications, 0 dBu = 0.775 Vrms.
* All output DA converters are 24 bit, 128 times oversampling.

## ❑ Digital Input & Output Characteristics

| Terminal | | Format | Data Length | Level | Audio | Connector |
|---|---|---|---|---|---|---|
| 2TR OUT DIGITAL*1 | AES/EBU | AES/EBU Professional Use*1 | 24 bit | RS422 | — | XLR-3-32 type (Balanced)*2 |
| EtherSound <M7CL-48ES> | | Ethersound | 24 bit | 100Base-TX | 48ch Input/24ch Output @48kHz | etherCON *3 |

*1. The channel status of 2TR OUT DIGITAL is described on page 294.
*2. XLR-3-32 type connectors are balanced. (1=GND, 2=HOT, 3=COLD)
*3. IN, OUT

- **Channel Status of 2TR OUT DIGITAL**

| byte | bit | field name | fixed/variable | data | description |
|---|---|---|---|---|---|
| 0 | 0 | Block Format | fixed | 1 | professional use |
| | 1 | Mode | | 0 | audio |
| | 2-4 | Emphasis | | 0x4 | off |
| | 5 | Fs Lock | | 0 | lock |
| | 6-7 | Sampling Frequency | variable | 0x0 | others |
| | | | | 0x3 | 32 kHz |
| | | | | 0x2 | 44.1 kHz |
| | | | | 0x1 | 48 kHz |
| 1 | 0-3 | Channel Mode | fixed | 0x1 | 2ch mode |
| | 4-7 | Users Bit Management | | 0x0 | — |
| 2 | 0-2 | Use of AUX | fixed | 0x1 | 24 bits Audio Data |
| | 3-7 | Source | | 0x00 | — |
| 3 | 0-7 | Multi Channel | fixed | 0x00 | — |
| 4 | 0-1 | Digital Audio Reference Signal | fixed | 0x0 | — |
| | 2 | — | | 0 | |
| | 3-6 | Sampling Frequency | variable | 0x0 | others |
| | 7 | Sampling Frequency Scan Flag | fixed | 0 | — |

## ❑ Control I/O Characteristics

| Terminal | | Format | Level | Connector |
|---|---|---|---|---|
| NETWORK | | IEEE802.3 | — | RJ-45 |
| 3rd Port <M7CL-48ES> | | | | |
| MIDI | IN | MIDI | | DIN Connector 5P |
| | OUT | | | |
| WORD CLOCK | IN | — | TTL/75Ω | BNC Connector |
| | OUT | | TTL/75Ω | |
| REMOTE <M7CL-32/48> | | — | RS422 | D-Sub Connector 9P (Male) |
| LAMP 1 (32ch), 2 (48ch) | | — | 0 V - 12 V | XLR-4-31 type*1 |
| USB HOST | | USB 1.1 | — | A type USB Connector |

*1. 4pin=HOT, 3pin=COLD, Lamp rating 5 W, Voltage control by software

# Electrical characteristics

All faders are nominal when measured. Output impedance of signal generator:150ohms

## ❑ Frequency Response

Fs= 44.1 kHz or 48 kHz @20 Hz–20 kHz, referenced to the nominal output level @1 kHz

| Input | Output | RL | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| INPUT 1-48 <M7CL-48><br>INPUT 1-32 <M7CL-32> | OMNI OUT 1-16 | 600 Ω | GAIN: Max. | –1.5 | 0.0 | 0.5 | dB |
| | PHONES | 8 Ω | | –3.0 | 0.0 | 0.5 | |
| ST IN 1-4 [L,R] <M7CL-32/48><br>OMNI IN 1-8 <M7CL-48ES> | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | GAIN: Max. | –1.5 | 0.0 | 0.5 | |
| | PHONES | 8 Ω | | –3.0 | 0.0 | 0.5 | |

## ❑ Gain Error

Fs= 44.1 kHz or 48 kHz @1 kHz

| Input | Output | RL | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| INPUT 1-48 <M7CL-48><br>INPUT 1-32 <M7CL-32> | OMNI OUT 1-16 | 600 Ω | Input level : –62 dBu , GAIN :<br>–62 dB → Output level +4.0 dBu (Typ.) | –2.0 | 0 | 2.0 | dB |
| | | | Input level : +10 dBu , GAIN :<br>+10 dB → Output level +4.0 dBu (Typ.) | | | | |
| ST IN 1-4 [L,R] <M7CL-32/48><br>OMNI IN 1-8 <M7CL-48ES> | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | Input level : -62 dBu , GAIN :<br>–62 dB → Output level +4.0 dBu (Typ.) | –2.0 | 0 | 2.0 | |
| | | | Input level : +10 dBu , GAIN :<br>+10 dB → Output level +4.0 dBu (Typ.) | | | | |
| Internal OSC | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | Full scale output, Output level :<br>+24.0 dBu (Typ.) | –0.5 | 0 | 0.5 | |
| | PHONES | 8 Ω | –30 dBFs , phones level control :<br>max. → Output level 0 dBu (Typ.) | –0.5 | 0 | 0.5 | |

## ❑ Total Harmonic Distortion

Fs= 44.1 kHz or 48 kHz

| Input | Output | RL | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| INPUT 1-48 <M7CL-48><br>INPUT 1-32 <M7CL-32> | OMNI OUT 1-16 | 600 Ω | +4 dBu @20 Hz–20 kHz, GAIN: Max. | | | 0.1 | % |
| | | | +4 dBu @20 Hz–20 kHz, GAIN: Min. | | | 0.05 | |
| ST IN 1-4 [L,R] <M7CL-32/48><br>OMNI IN 1-8 <M7CL-48ES> | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | +4 dBu @20 Hz–20 kHz, GAIN: Max. | | | 0.1 | |
| | | | +4 dBu @20 Hz–20 kHz, GAIN: Min. | | | 0.05 | |
| Internal OSC | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | Full Scale Output @1 kHz | | | 0.02 | |
| | PHONES | 8 Ω | Full Scale Output @1 kHz, PHONES<br>Level Control: Max. | | | 0.2 | |

* Total Harmonic Distortion is measured with a 18 dB/octave filter @80 kHz

## ❑ Hum & Noise

Fs= 44.1 kHz or 48 kHz, EIN= Equivalent Input Noise

| Input | Output | RL | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| INPUT 1-48 <M7CL-48><br>INPUT 1-32 <M7CL-32><br>OMNI IN 1-8 <M7CL-48ES> | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | Rs= 150Ω, GAIN: Max.<br>Master fader at nominal level and<br>one Ch fader at nominal level. | | –128<br>EIN | | dBu |
| | | | | | –62 | | |
| | | | Rs= 150Ω, GAIN: Min.<br>Master fader at nominal level and<br>one Ch fader at nominal level. | | –84 | –79 | |
| All INPUTs <M7CL-48> | OMNI OUT 1-16 | 600 Ω | Rs= 150Ω, GAIN: Min.<br>Master fader at nominal level and all Ch<br>1-48 in faders at nominal level. | | | –62 | |
| All INPUTs <M7CL-32> | OMNI OUT 1-16 | 600 Ω | Rs= 150Ω, GAIN: Min.<br>Master fader at nominal level and all Ch<br>1-32 in faders at nominal level. | | | –64 | |
| All INPUTs <M7CL-48ES> | OMNI OUT 1-8 | 600 Ω | Rs= 150Ω, GAIN: Min.<br>Master fader at nominal level and all<br>OMNI IN 1-8 in faders at nominal level. | | | –70 | |
| — | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | Residual Output Noise, ST Master Off | | | –86 | |
| — | PHONES | 8 Ω | Residual Output Noise, PHONES Level<br>Control Min. | | | –86 | |

* Hum & Noise are measured with a 6 dB/octave filter @12.7 kHz; equivalent to a 20 kHz filter with infinite dB/octave attenuation.

## ❑ Dynamic Range

Fs= 44.1 kHz or 48 kHz

| Input | Output | RL | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| INPUT 1-48 <M7CL-48><br>INPUT 1-32 <M7CL-32> | OMNI OUT 1-16 | 600 Ω | AD + DA, GAIN: Min. | | 108 | | dB |
| ST IN 1-4 [L,R] <M7CL-32/48><br>OMNI IN 1-8 <M7CL-48ES> | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | AD + DA, GAIN: Min. | | 108 | | |
| — | OMNI OUT 1-16 <M7CL-32/48><br>OMNI OUT 1-8 <M7CL-48ES> | 600 Ω | DA Converter | | 110 | | |

* Dynamic range are measured with a 6 dB/octave filter @12.7 kHz; equivalent to a 20 kHz filter with infinite dB/octave attenuation.

## ❑ Sampling Frequency

| Parameter | | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| External Clock | Frequency Range <M7CL-32/48> | | 39.69 | | 50.88 | kHz |
| | Frequency Range <M7CL-48ES> | | 43.00 | | 49.20 | |
| Internal Clock | Frequency | Word Clock : Int 44.1 kHz | | 44.1 | | |
| | | Word Clock : Int 48 kHz | | 48 | | |
| | Accuracy | Word Clock : Int 44.1 kHz | | | 50 | ppm |
| | | Word Clock : Int 48 kHz | | | | |
| | Jitter | Word Clock : Int 44.1 kHz | | | 5 | ns |
| | | Word Clock : Int 48 kHz | | | | |

# Mixer Basic Parameters

## ❑ Libraries

| Name | Number | Total |
|---|---|---|
| Scene Memory | Preset 1 + User 300 | 301 |
| Input CH Library | Preset 1 + User 199 | 200 |
| Output CH Library | Preset 1 + User 199 | 200 |
| Input EQ Library | Preset 40 + User 159 | 199 |
| Output EQ Library | Preset 3 + User 196 | 199 |
| Dynamics Library | Preset 41 + User 158 | 199 |
| Effect Library | Preset 48 + Reserve 9 + User 142 | 199 |
| GEQ Library | Preset 1 + User 199 | 200 |

## ❑ Input Function

| Function | Parameter |
|---|---|
| Phase | Normal/Reverse |
| Attenuator | –96 to +24 dB |
| HPF | Slope= 12 dB/Oct |
| | Frequency= 20 Hz to 600 Hz |
| 4 Band Equalizer | Frequency= 20 Hz to 20 kHz |
| | Gain= –18 dB to +18 dB |
| | Q= 0.10 to 10.0 |
| | Low Shelving (Low Band) |
| | High Shelving, LPF (High Band) |
| | Type I/Type II |
| Insert | Insert Point: Pre EQ/Pre Fader/Post On |
| Direct Out | Direct Out Point: Pre HPF/Pre EQ/Pre Fader/ Post On |
| Dynamics 1 | Type: Gate/Ducking/Comp/Expander |
| | Threshold= –54 dB to 0 dB |
| | Ratio= 1:1 to ∞:1 |
| | Attack= 0 msec to 120 msec |
| | Hold= 0.02 msec to 1.96 sec |
| | Decay= 5 msec to 42.3 sec (Release) |
| | Releace= 5msec to 42.3 sec |
| | Range= –70 dB to 0 dB |
| | Gain= –18 dB to 0 dB, 0 dB to +18 dB |
| | Knee= Hard to 5 (soft) |
| | Key In: Self Pre EQ/Self Post EQ/Mix Out 13-16 Ch1-STIN4R (8ch block) |
| | Key In Filter:HPF/LPF/BPF |
| Dynamics2 | Type: Comp/De-Esser/Compander H/ Compander S |
| | Threshold= –54 dB to 0 dB |
| | Ratio= 1:1 to ∞:1 |
| | Attack= 0 msec to 120 msec |
| | Release= 5 msec to 42.3 sec |
| | Gain= –18 dB to 0 dB, 0 dB to +18 dB |
| | Knee= Hard to 5 (soft) |
| | Key In: Self Pre EQ/Self Post EQ/Mix Out 13-16 Ch1-STIN4R (8ch block) |
| Fader | Level: 1024 steps, ∞, –138 dB to +10 dB |
| On | On/Off |
| DCA Group | 8 Groups |
| Mute Group | 8 Groups |
| Mix Send | 16 sends |
| | Fix/Variable can be set each two mixes |
| | Mix Send Point:Pre EQ/Pre Fader/Post On |
| | Level: 1024 steps, ∞, –138 dB to +10 dB |
| Matrix Send | 8 Sends |
| | Matrix Send Point:Pre EQ/Pre Fader/Post On |
| | Level: 1024 steps, ∞, –138 dB to +10 dB |
| LCR Pan | CSR= 0% to 100% |

## ❑ Output Function

| Function | Parameter |
|---|---|
| Attenuator | –96 to +24 dB |
| 4Band Equalizer | Frequency= 20 Hz to 20 kHz |
| | Gain= –18 dB to +18 dB |
| | Q= 0.10 to 10.0 |
| | Low Shelving (Low Band) |
| | High Shelving, LPF (High Band) |
| | Type I/Type II |
| Insert | Insert Point: Pre EQ/Pre Fader/Post On |
| Dynamics 1 | Type: Comp/Expander/Compander H/Compander S |
| | Threshold= –54 dB to 0 dB |
| | Ratio= 1:1 to ∞:1 |
| | Attack= 0 msec to 120 msec |
| | Release= 5 msec to 42.3 sec |
| | Gain= –18 dB to 0 dB, 0 dB to + 18 dB |
| | Knee= Hard to 5 (soft) |
| | Key In: Self Pre EQ/Self Post EQ/Mix Out13-16 MIX1-16/MTRX1-8/STIN LR/MONO(C) (8ch block) |
| Fader | Level: 1024 steps, ∞, –138 dB to +10 dB |
| On | On/Off |
| Mute Group | 8 Groups |
| Mix to Matrix Stereo to Matrix | Matrix Send Point: Pre Fader/Post On |
| | Level: 1024 steps, ∞, –138 dB to +10 dB |
| Oscillator | Level= 0 to –96dB (1 dB step) On/Off= Software control |

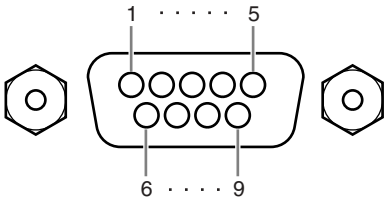
## ❑ Output Port

| Function | Parameter |
|---|---|
| Out Port Delay | 0 msec to 600 msec |
| Out Port Phase | Normal/Reverse |
| Attenuator | –96 to +24 dB |

## ❑ Processor

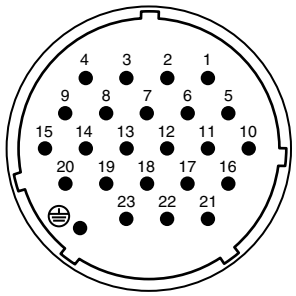
| Function | Parameter |
|---|---|
| GEQ | 31 bands x 4(8) systems |
| Effects | Stereo In/Stereo Out multi effector x 4 systems |

# Pin Assignment




## ❑ REMOTE

| Pin | Signal Name | Pin | Signal Name |
|---|---|---|---|
| 1 | GND | 6 | RX+ |
| 2 | RX– | 7 | RTS |
| 3 | TX– | 8 | CTS |
| 4 | TX+ | 9 | GND |
| 5 | N.C | | |

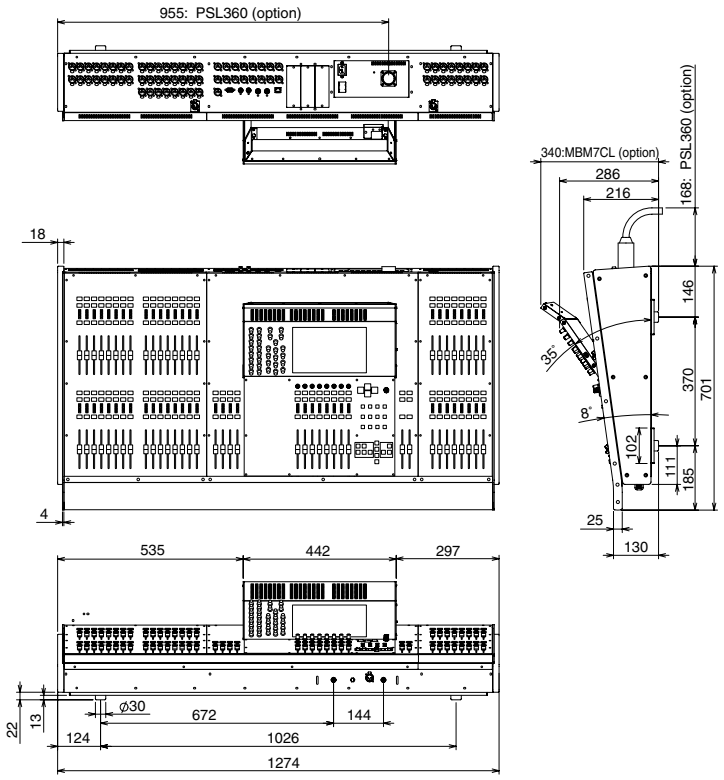



## ❑ DC POWER INPUT

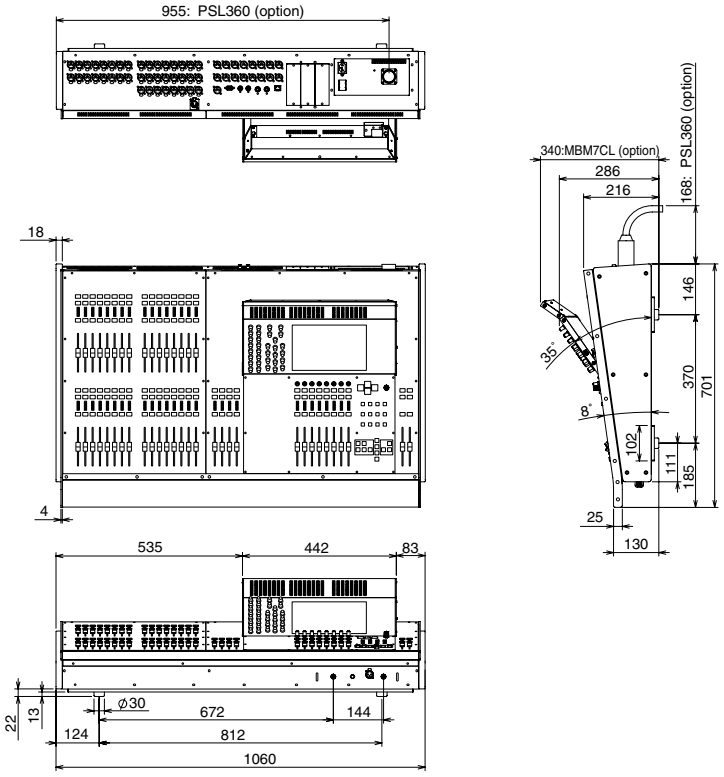
| Pin | Signal Name | Pin | Signal Name |
|---|---|---|---|
| 1 | +24V | 13 | GND |
| 2 | +24V | 14 | GND |
| 3 | +24V | 15 | GND |
| 4 | +24V | 16 | GND |
| 5 | +24V | 17 | GND |
| 6 | +24V | 18 | GND |
| 7 | +24V | 19 | CAUTION(+) |
| 8 | +24V | 20 | CAUTION(–) |
| 9 | +24V | 21 | DETECT A |
| 10 | GND | 22 | DETECT B |
| 11 | GND | 23 | DETECT GND |
| 12 | GND | ⏚ | Frame GND |

# Dimensions

## M7CL-48/48ES




## M7CL-32




Unit : mm

* Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

European models

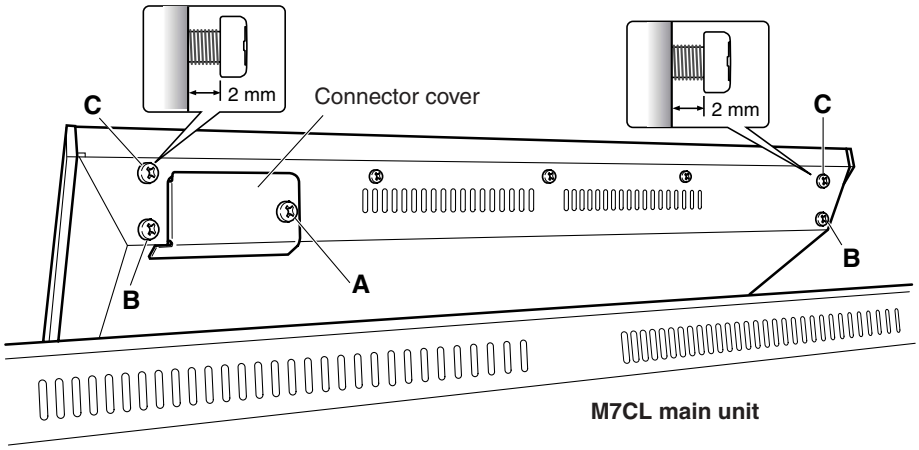
Purchaser/User Information specified in EN55103-1 and EN55103-2.

Inrush Current: 21A

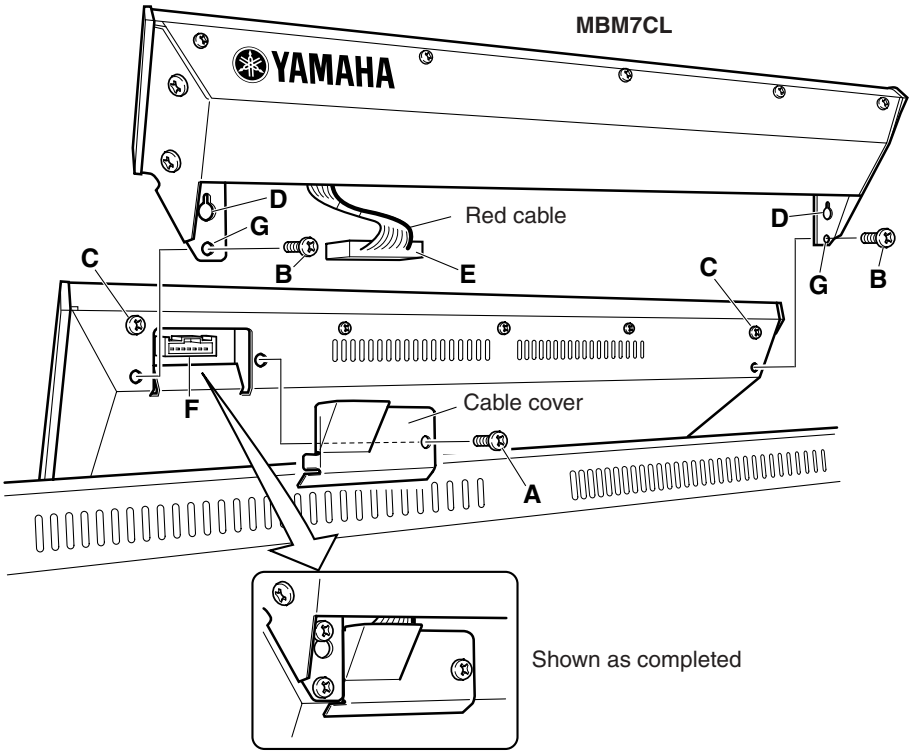
Conforms to Environments: E1, E2, E3 and E4

# Installing the MBM7CL meter bridge (option)

1. Remove screw **A** from the rear of the M7CL's touch screen, and remove the connector cover.
2. Remove screws **B** (two locations).
3. Loosen screws **C** (two locations) so that they protrude approximately 2 mm.




4. Hook holes **D** of the MBM7CL's attachment fixture over the M7CL's screws **C** (two locations, at left and right).
5. Connect the MBM7CL's connector **E** to the M7CL's connector **F**.
   * Orient the connector so that the red cable is at the right when viewed from the rear panel.
6. Insert the two screws **B** (which you removed in step **2**) into holes **G** of the MBM7CL's attachment fixture, and tighten them.
7. Tighten screws **C** (two locations) to fasten the MBM7CL to the M7CL.
8. Using screw **A** which you removed in step **1**, fasten the cable cover included with the MBM7CL. This completes the installation procedure.




**⚠ *CAUTION***

- ***Before connecting the MBM7CL meter bridge to the M7CL, you must turn off the power switches of the M7CL and the PW800W. Failure to observe this will cause malfunctions or electric shock.***

YAMAHA [ Digital Mixing Console ] Date :8-Aug-2005
Model M7CL MIDI Implementation Chart Version : 1.0

| Function... | | Transmitted | Recognized | Remarks |
|---|---|---|---|---|
| Basic Channel | Default | 1 - 16 | 1 - 16 | Memorized |
| | Changed | 1 - 16 | 1 - 16 | |
| Mode | Default | x | 1, 3 | Memorized |
| | Messages | x | x | |
| | Altered | ********** | x | |
| Note Number | True voice | x<br>********** | 0 - 127<br>x | |
| Velocity | Note ON | x | o | Effect Control |
| | Note OFF | x | o | |
| After Touch | Key's | x | x | |
| | Ch's | x | x | |
| Pitch Bend | | x | x | |
| Control Change | 0,32 | o | o | Bank Select |
| | 6,38 | o | o | Data Entry |
| | 98,99 | o | o | NRPN LSB,MSB |
| | 1-31,33-98, 102-119 | o | o | Assignable Cntrl |
| Prog Change | True # | o 0 - 127<br>********** | o 0 - 127<br>0 - 300 | Assignable |
| System Exclusive | | o *1 | o *1 | |
| System Common | Song Pos | x | x | |
| | Song Sel | x | x | |
| | Tune | x | x | |
| System Real Time | Clock | x | o | Effect Control |
| | Commands | x | x | |
| Aux Mes-sages | All Sound Off | x | x | |
| | Reset All Cntrls | x | x | |
| | Local ON/OFF | x | x | |
| | All Notes OFF | x | x | |
| | Active Sense | x | o | |
| | Reset | x | o | |

Notes: *1 :Bulk Dump/Request,Parameter Change/Request,and MMC.

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON ,MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF,MONO x : No

# Index

## Symbols


[3rd] connector ..... 26
[DCA] key ..... 23
[DYNAMICS 1] encoder ..... 20
[DYNAMICS 2] encoder ..... 20
[HA] encoder ..... 19
[HPF] encoder ..... 20
[IN 1-8] key ..... 23
[IN 9-16] key ..... 23
[IN 17-24] key ..... 23
[IN 25-32] key ..... 23
[IN 33-40] key ..... 23
[IN 41-48] key ..... 23
[MATRIX] key ..... 23
[MIX 1-8] key ..... 23
[MIX 9-16] key ..... 23
[MIX/MATRIX] encoder ..... 19
[PAN] encoder ..... 19
[ST IN] key ..... 23
[STEREO] key ..... 23


## Numerics


2TR OUT DIGITAL jack ..... 25
31BandGEQ ..... 171, 175, 177


## A


AC IN connector ..... 26
Adjusting
  Detection point of the touch screen (Calibration function) ..... 239
  Faders ..... 240
  Input/output gain ..... 241
Administrator ..... 207
Analog input connections ..... 46
Analog output connections ..... 47
Assigning channels to a DCA group ..... 123
Assigning channels to mute groups ..... 126
ATT/HPF/EQ popup window
  1 ch ..... 115
  8 ch ..... 116
Audio input/output connections ..... 46


## B


Banks A/B ..... 237
BRIGHTNESS ..... 237
Brightness of the touch screen, LEDs, and lamps ..... 237
Buttons ..... 30


## C


Calibration function ..... 239
Cascade connections ..... 232
Cascade master ..... 233
Cascade slave ..... 232
Centralogic section ..... 21, 97
  Operations ..... 100
CH CLEAR ..... 134
CH COPY ..... 132
CH JOB ..... 33, 123
CH LINK ..... 130
CH MOVE ..... 133
Changing
  Input patch settings ..... 108
  Output patch settings ..... 105
  Password ..... 211
  User level ..... 212
Channel Link ..... 130
Channel name and icon ..... 59, 81
Channel parameters
  Copying ..... 132
  Initializing ..... 134
  Moving ..... 133
Channel structure ..... 14
Clearing a scene ..... 143
COMMENT field ..... 136
COMPANDER HARD (COMPANDER-H) ..... 251
COMPANDER SOFT (COMPANDER-S) ..... 251
Comparing two settings ..... 40
COMPRESSOR ..... 250
Connecting the M7CL-32/48 to the AD8HR ..... 190
Console lock ..... 217
Control Change ..... 197, 203, 270
Control change parameter assignments ..... 272
Controlling DCA groups ..... 125
Controlling mute groups ..... 127
Copying the parameters of a channel ..... 132
Copying/pasting a file ..... 223
Copying/pasting a scene ..... 142
Copying/pasting settings ..... 40
Cue ..... 157
Cue function ..... 158
Current scene ..... 50
Cutting a scene ..... 144


## D


Daisy chain ..... 190
Daisy chain connection (M7CL-48ES) ..... 44
DC POWER INPUT connector ..... 26
DCA CUE ..... 157
DCA GROUP ASSIGN ..... 124
DCA UNITY ..... 159

DEC RECALL ..... 139
DE-ESSER ..... 251
Deleting a file ..... 223
Dialog boxes ..... 32
Digital input/output connections .. 48
Dimensions ..... 299
DIMMER ..... 153
DIRECT RECALL ..... 139
Directly outputting ..... 112
Directory ..... 224
Display section ..... 20
DUCKING ..... 249
Dynamics ..... 118
Dynamics library ..... 121
DYNAMICS Library List ..... 246
Dynamics parameter ..... 249

## E

E symbol (EDIT symbol) ..... 136
Effect library ..... 189
Effect Type List ..... 252
Effects ..... 171
Effects and tempo synchronization ..... 265
Effects Parameters ..... 253
Electrical characteristics ..... 295
Encoder operations ..... 29
Entering names ..... 34
EQ ..... 115
EQ [FREQUENCY] encoders ..... 20
EQ [GAIN] encoders ..... 20
EQ [Q] encoders ..... 20
EQ and dynamics ..... 115
EQ library ..... 121
EQ Library List ..... 245
EQ popup window (ALL) ..... 117
Error Messages ..... 289
EtherSound connectors ..... 26
EXPANDER ..... 250
External head amp ..... 190

## F

Fade function ..... 151
FADE TIME ..... 151
Faders ..... 31
File
  Convert ..... 220
  Copying/pasting ..... 223
  Deleting ..... 223
Firmware version ..... 16
FIXED ..... 15, 234
Fixing the channels or DCA groups of the Centralogic section ..... 104
Flex15GEQ ..... 171, 175, 178
FOCUS ..... 147
Focus function ..... 147
Freeze effect ..... 188
Function access area ..... 32
Functions that can be assigned to user-defined keys ..... 280

## G

GATE ..... 249
GATEWAY ADDRESS ..... 236
General Specifications ..... 293
GEQ library ..... 189
GLOBAL RECALL SAFE ..... 148
Graphic EQ ..... 171, 175
Grounding screw ..... 26
Guest ..... 207

## H

HA (Head Amp) gain settings ..... 51
HA (Head Amp) settings ..... 61
HA/PATCH popup window
  1 ch ..... 61
  8 ch ..... 62
  ALL ..... 62
Help ..... 33, 225

## I

IN/OUT [TX]/[RX] indicator ..... 26
INC RECALL ..... 139
Initialize the internal memory ..... 238
Initializing ..... 39, 134
INPUT channels ..... 14, 57
INPUT CUE ..... 157
INPUT jacks ..... 24
Input patch settings ..... 108
INPUT section ..... 18
Input/output characteristics ..... 293
INSERT/DIRECT OUT popup window
  1ch ..... 110, 112
  8ch ..... 110, 113
Inserting a scene ..... 144
Installing an option card ..... 49
Internal clock ..... 235
Internal effect parameters ..... 184
Internal effects ..... 180
  Inserting an internal effect into a channel ..... 183
Internal memory ..... 238
IP ADDRESS ..... 236

## K

Keyboard window ..... 31
Keys
  Special operations ..... 29
Knobs ..... 31

## L

LAMP connector ..... 25
LCR mode ..... 63, 82
Libraries ..... 35
Link group ..... 130
LINK MODE ..... 236
List windows ..... 31
Logging-in ..... 209

## M


M7CL-32 ..... 12
M7CL-48 ..... 11
M7CL-48ES ..... 13
MAC ADDRESS ..... 236
Main area ..... 33
MATRIX buses ..... 234
MATRIX channels ..... 14, 80
MATRIX meters ..... 19
MBM7CL meter bridge ..... 19, 169
  Installing ..... 300
Meters ..... 33, 167
MIDI ..... 197
MIDI Data Format ..... 282
MIDI Implementation Chart ..... 301
MIDI IN/OUT connectors ..... 25
MIX bus types (VARI / FIXED) ..... 15
MIX buses ..... 234
MIX channels ..... 14, 79
MIX meters ..... 19
Mixer Basic Parameters ..... 297
Mixing parameter operation applicability ..... 277
MONITOR ..... 33
MONITOR FADER ..... 154
Monitor function ..... 153
MONITOR section ..... 22
MONO (C) channel ..... 14, 79
Moving the parameters of a channel ..... 133
Multi mode ..... 201
Multifunction encoder operations ..... 30
Multiple selection (specifying a range) ..... 29
MUTE GROUP ASSIGN ..... 126
MUTE MASTER ..... 128
MUTE SAFE ..... 126
Mute Safe function ..... 129
MUTE SAFE indicator ..... 127


## N


NAVIGATION KEYS section ..... 23
Network address ..... 236
NETWORK connector ..... 25
NRPN (Non Registered Parameter Number) ..... 203
NRPN parameter assignments ..... 274


## O


OMNI IN jacks ..... 24
OMNI OUT jacks ..... 25
Option card ..... 49
OSCILLATOR ..... 164
Output channels ..... 14, 79
OUTPUT CUE ..... 157
Output patch settings ..... 105
OVERVIEW screen ..... 33, 98


## P


Parameter change ..... 197
Password ..... 211
PATCH / NAME popup window (PATCH) ..... 108
Phase (ø) ..... 58
PHONES LEVEL ..... 154
PHONES LEVEL knob ..... 27
PHONES LEVEL LINK ..... 154
PHONES OUT (headphone output) jack ..... 27
Pin Assignment ..... 298
Popup windows ..... 32
POWER switch ..... 26
PRE EQ ..... 234
PRE FADER ..... 234
Preferences ..... 214
Program Change ..... 197
Protect symbol ..... 136


## R


R symbol (READ ONLY symbol) ..... 136
RACK ..... 33
Rear panel ..... 24
Recall Safe ..... 148
RECALL UNDO ..... 138
Recalling a scene ..... 138
REMOTE connector ..... 25
Remotely controlling an external head amp ..... 193
Restoring the current scene to the default state ..... 50
Ring connection ..... 45


## S


SCENE ..... 33
  Clearing ..... 143
  Copying/pasting ..... 142
  Cutting ..... 144
  Global Paste ..... 145
  Inserting ..... 144
  Recalling ..... 138
  Storing ..... 135
SCENE field ..... 136
Scene memory ..... 135
SCENE MEMORY/MONITOR section ..... 22
Scene number ..... 136
Scene title ..... 136
SELECTED CHANNEL section ..... 19, 67, 72, 85, 89
  Operations ..... 91
SELECTED CHANNEL VIEW screen ..... 33, 90
Sending an input channel signal to the STEREO bus ..... 54
Sending signals from MIX channels and STEREO/MONO channels to MATRIX buses ..... 85
Sending signals from MIX channels to the STEREO/MONO bus ..... 82
Sending the signal from an input channel to a MIX bus ..... 67
Sending the signal from an input channel to the MATRIX buses ..... 72

Sending the signal from an input channel to the STEREO/MONO buses ..... 63
SENDS ON FADER ..... 33
Settings
Copying ..... 40
Initializing ..... 39
Pasting ..... 40
SETUP ..... 33
SETUP screen ..... 229
Signal flow for input channels ..... 57
Signal flow for output channels ... 79
Single mode ..... 201
Slots 1–3 ..... 26
ST IN (Stereo Input) section ..... 18
ST IN channels ..... 14, 57
ST IN jacks 1–4 ..... 25
ST/MONO mode ..... 63, 82
STAGE BOX DATA CONVERSION ..... 220
STAGE BOX SETUP ..... 242
STEREO channel ..... 14, 79
STEREO/MONO MASTER section ..... 23
STORE UNDO ..... 137
Storing a scene ..... 135
SUBNET MASK ..... 236

## T

Tabs ..... 30
Talkback ..... 161
TALKBACK DIMMER ..... 155
TALKBACK GAIN knob ..... 27
TALKBACK jack ..... 27
Tap Tempo function ..... 186
Time ..... 32
Time stamp ..... 141
TO STEREO/MONO popup window
8 ch ..... 63, 83
ALL ..... 64, 83
Tool buttons ..... 35
Top panel ..... 17
Touch screen ..... 20, 29
Troubleshooting ..... 291

## U

Under the front pad ..... 27
USB connector ..... 20
USB storage device
Formatting media ..... 224
Save/load data ..... 218
User ..... 207
User authentication keys ..... 207, 209, 212
User defined keys ..... 22, 216, 280
USER DEFINED KEYS section ... 22
User level ..... 212
User Level settings ..... 207
User name ..... 32
User settings ..... 207
Using an internal effect via send/return ..... 181
Using the Centralogic section ..... 67, 69, 72, 74, 85, 86
Using the faders (SENDS ON FADER mode) .. 67, 70
Using the SELECTED CHANNEL section ..... 72, 85

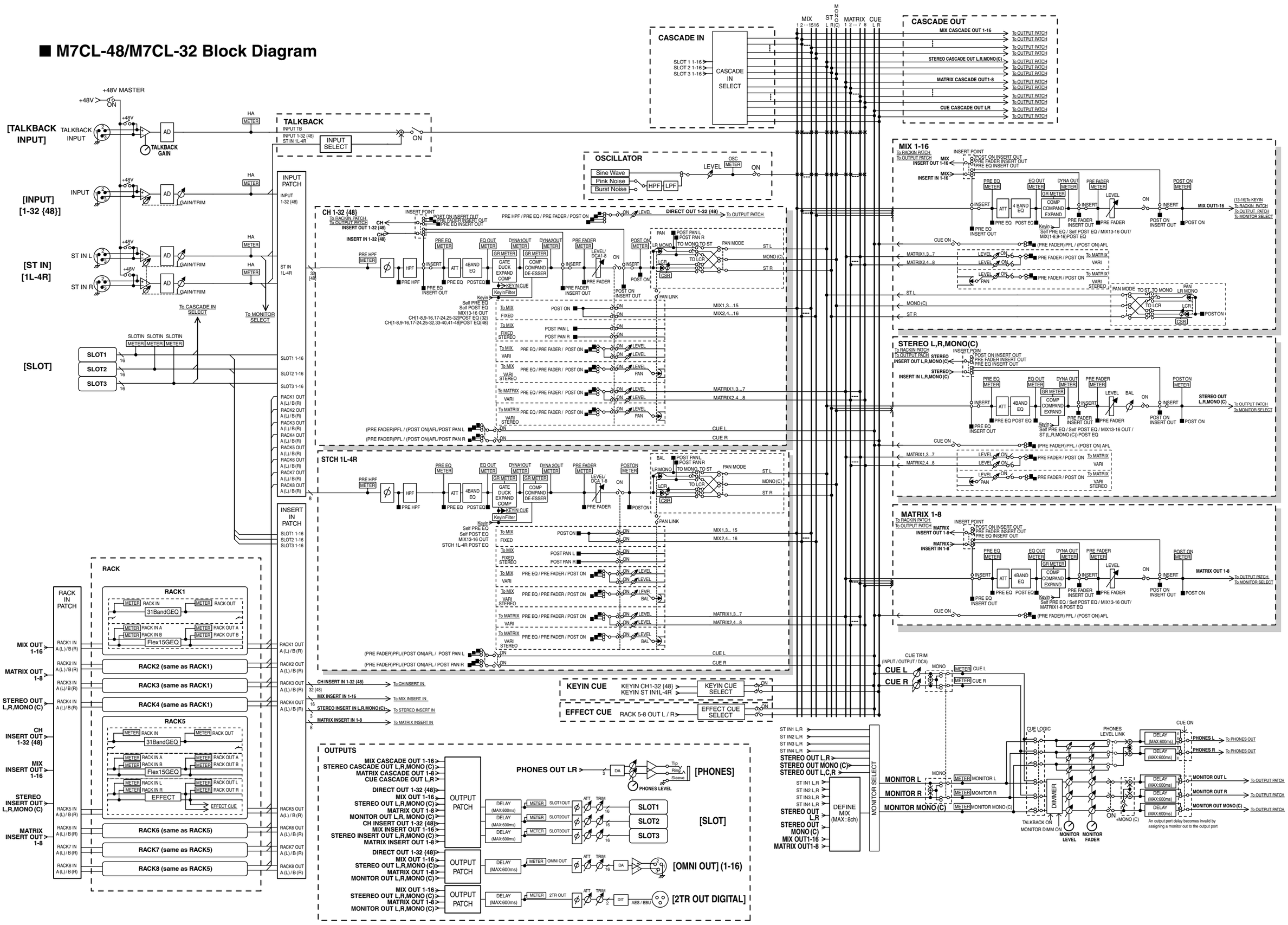
## V

VARI ..... 15
VARI [PRE EQ] ..... 234
VARI [PRE FADER] ..... 234
Version/Power supply field ..... 229
Virtual rack ..... 171

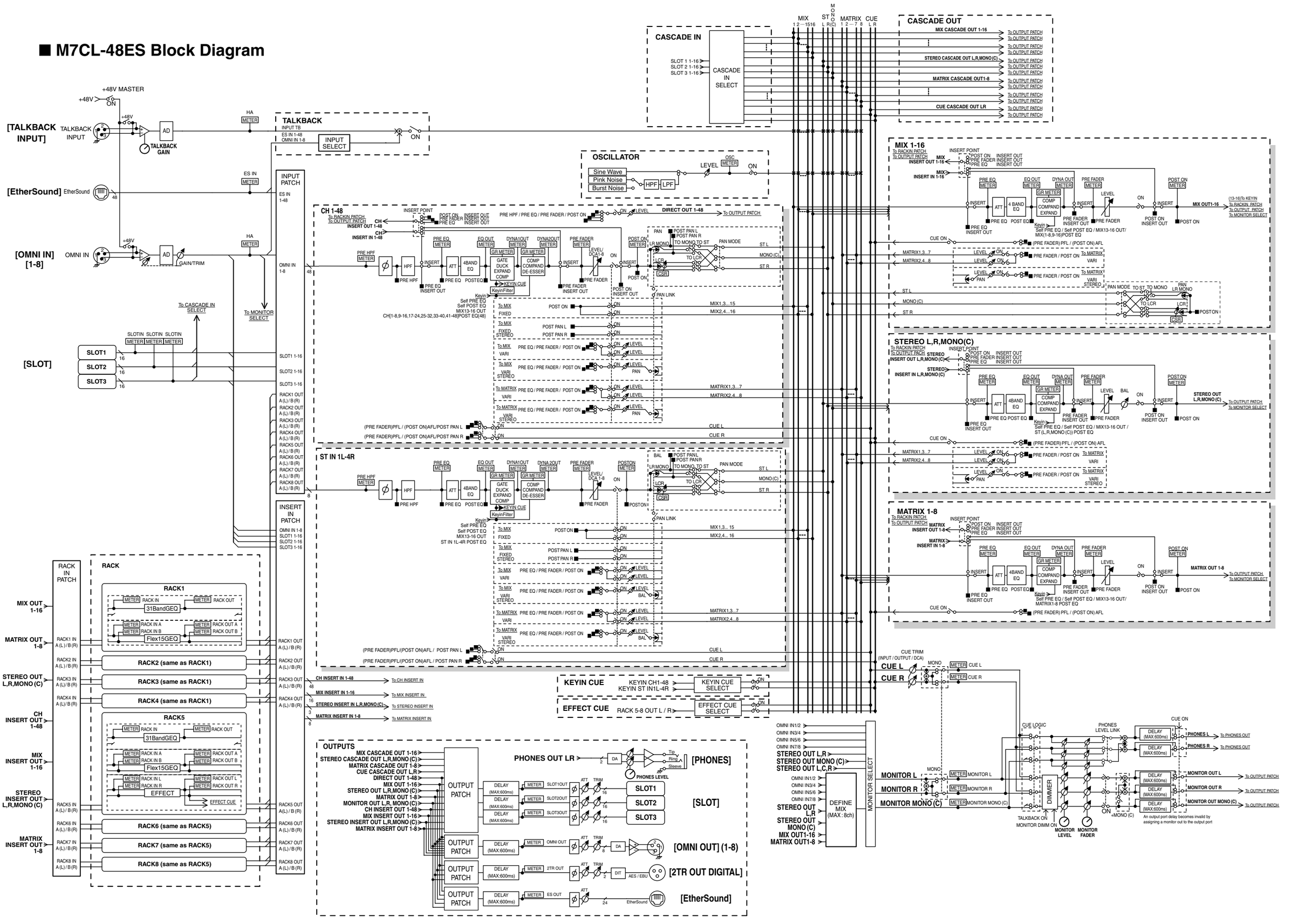
## W

Warning ..... 289
Word clock ..... 15, 230
Word clock connections and settings ..... 50
WORD CLOCK IN/OUT connectors ..... 25

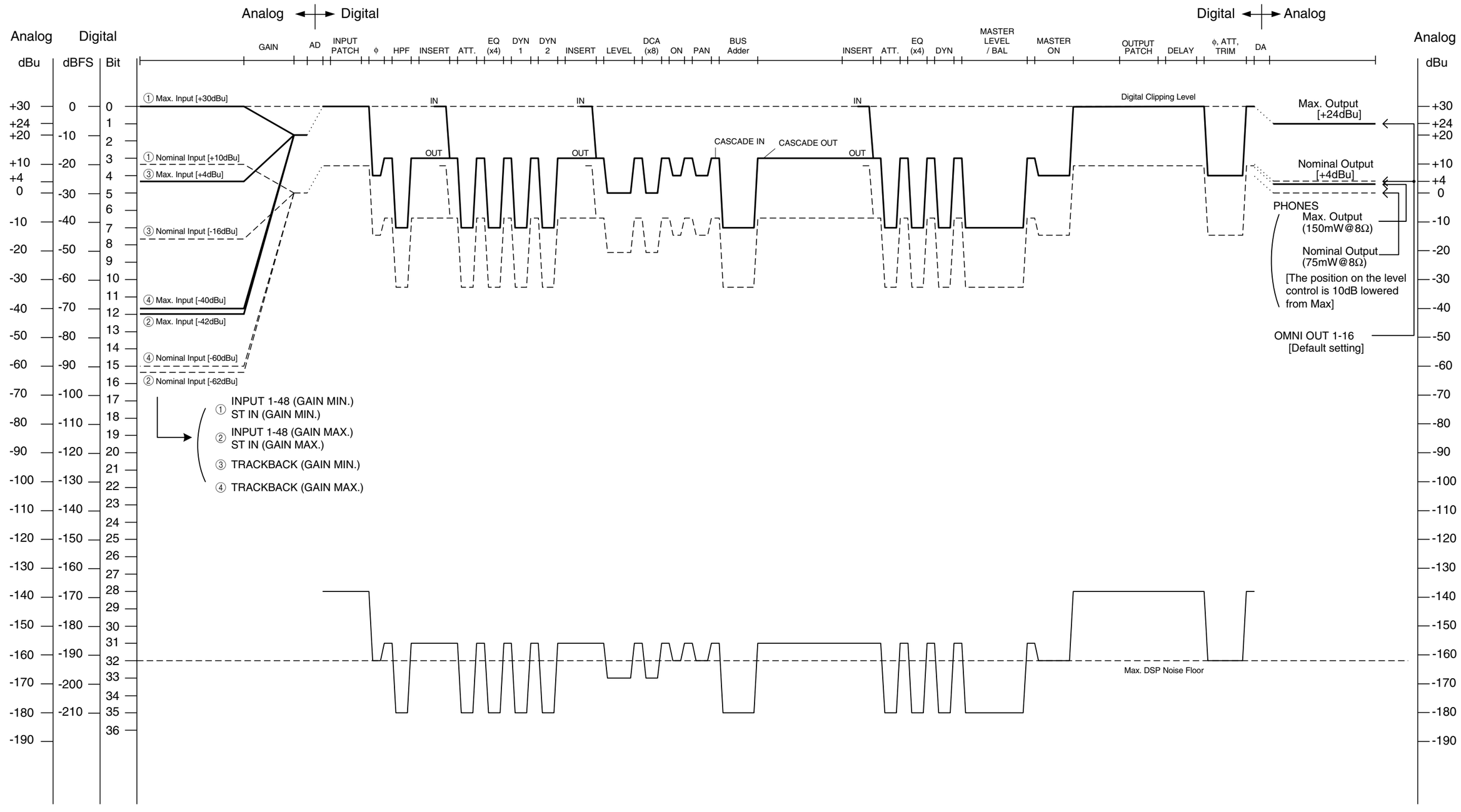
# ■ M7CL-48/M7CL-32 Block Diagram



# ■ M7CL-48ES Block Diagram

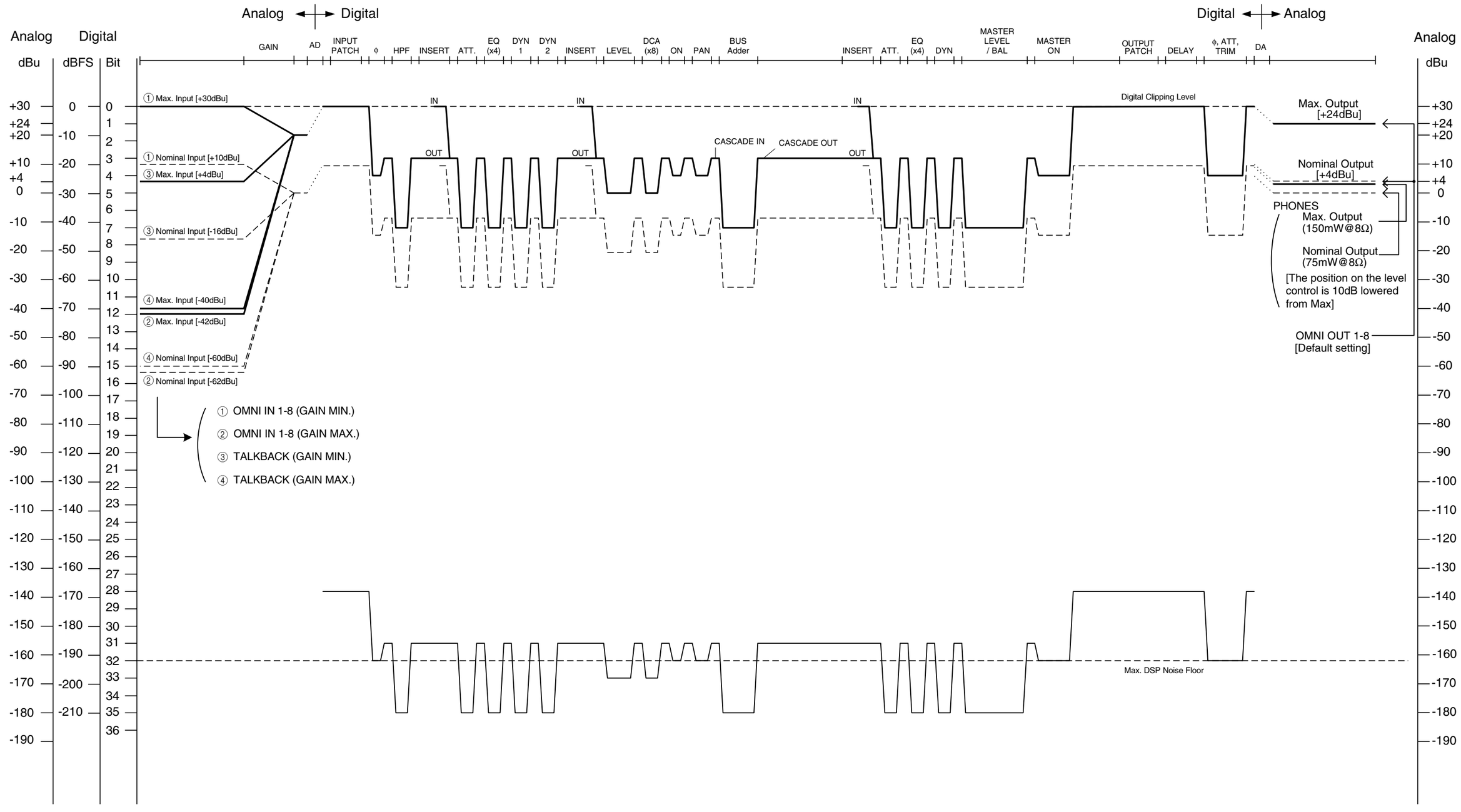


## ■ M7CL-48/M7CL-32 Level Diagram




[0dBu = 0.775Vrms]
[0dBFS = Full Scale]

## ■ M7CL-48ES Level Diagram




[0dBu = 0.775Vrms]
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